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American Psychosomatic Society—March 27-28; New Orleans.

Association of American Physicians—May 4-5; Atlantic City, N. J.

Fourth National Conference on College Health —May 5-8; New York.

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International Cancer Congress—July 23-29; Sao Paulo, Brazil.

International Congress of Gynecology—July 21-26, 1954; Geneva, Switzerland.

International Congress of Internal Medicine—September 15-18; Stockholm, Sweden.

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International Congress of Ophthalmology—September 10-11; Montreal, Canada.

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International Gerontological Congress—July 12 22; London and Oxford, England.

International Poliomyelitis Congress—September 6-10; Rome, Italy.

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National Tuberculosis Association—May 17-21; Atlantic City, N. J.

Student American Medical Association—May 1-3; Chicago.

World Congress of Cardiology—September 12 17; Washington, D. C., and Bethesda, Md.

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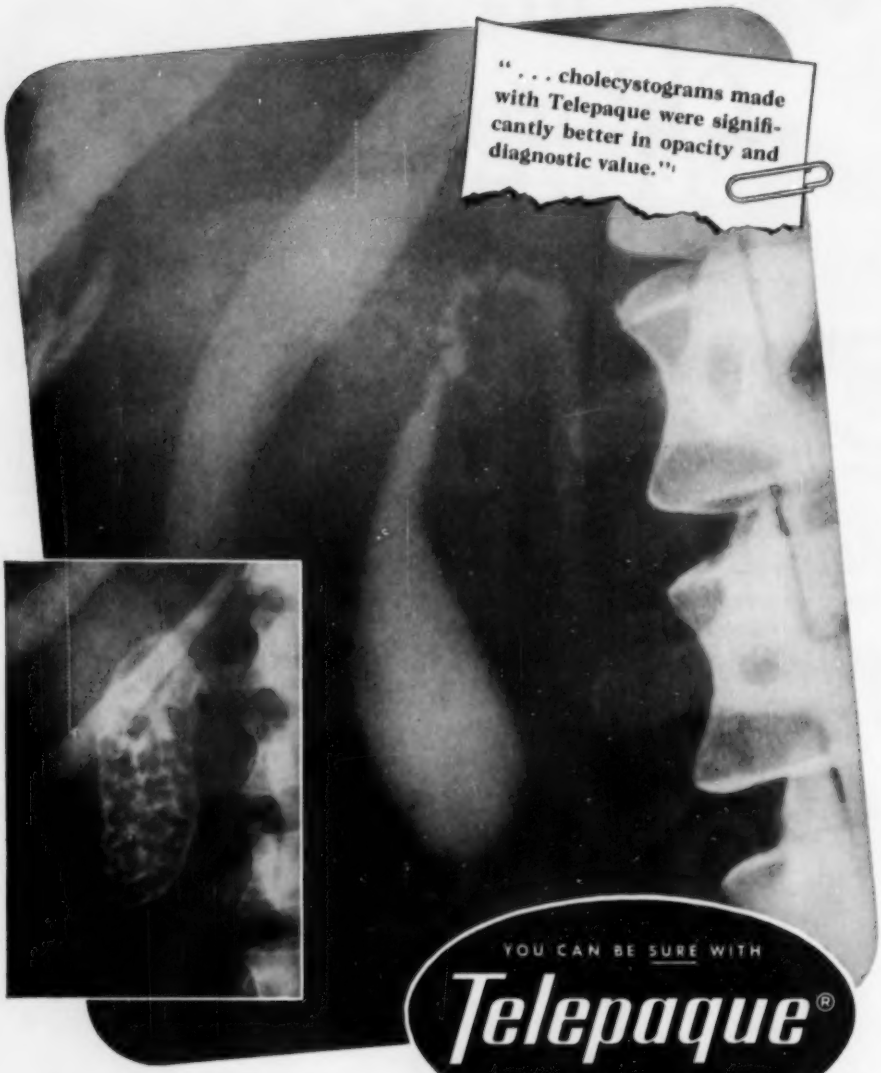
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1. Hillis, B.R.: Lancet 1:1230-35 (June 21) 1952.

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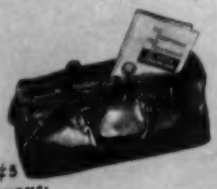

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Experimental Projects in Medical Teaching

EDWARD M. BRIDGE

IN MOST COLLEGES and professional schools lectures and laboratory or field experiences are the accepted methods of instruction. The essential facts are presented and the student is expected to make use of lecture notes and supplementary reading. In some areas practical work in laboratory or field serves to extend and add reality to the content of the lectures. Success is judged in large measure by ability to reproduce the material at the time of examination. Under this system the student's role is largely passive.

In spite of the success of this system in the past, certain limitations are obvious, and from many directions attempts have come to develop educational methods that would place more emphasis on the students' responsibility and initiative. Dewey, Whitehead, Hutchins and many others have made important contributions in this direction, and today a different approach to education is present in most primary public schools, in some preparatory schools and colleges, and in an occasional department of professional schools.

Whether or not an adequate substitute for the lecture system is possible in training for the professions is under debate. The report which follows describes an experiment in professional education and a modification of the role which a teacher usually performs.

Dr. Bridge is professor of pharmacology and applied physiology at the University of Buffalo School of Medicine.

Method Patterns

In most American medical schools today two distinct patterns of educational methods are followed. During the first two years a carefully organized series of lectures is integrated with first-hand laboratory experience in certain appropriate aspects. The whole represents a continuation of the instructional plan used in most colleges and preparatory schools, and might be called the lecture-laboratory method.

In the clinical years the approach is quite different, and historically represents an adaptation of the apprenticeship of previous generations. Lectures are few and in some schools absent altogether. Instead, the student is sent to the bedside and asked to record the development of an illness and with his eyes, ears and hands to ascertain structural and functional changes in the ill person. During succeeding days he continues to follow developments at the bedside until his "case" becomes an indelible part of himself.

The process is repeated on the random basis with which ill persons come to the hospital for help, but "coverage" of all diseases is not con-

sidered an essential. Instead, emphasis is placed on the method of approach to illnesses of unknown nature and on adaptability to the never-ending variations among human beings and their health problems.

This method is highly individualized and might be defined as learning through experience, or in the current educational terminology, as "instrumentalism." As originally conceived by science instructors, experiment in the laboratory was viewed as learning through experience and as providing benefits in the basic science fields comparable to those of the hospital clerkship. Yet most preclinical teachers will agree that whether by accident or inherent defect, the shortcomings of routine laboratory exercises are pronounced.

It is difficult, for example, to design and carry out experiments for large classes that provide a dynamic experience for each student. He may resort to following instructions in a cookbook manner or watching others perform the experiment. Or he may go through the motions without interest in the result and end with a feeling that the time could have been better spent in reading a textbook which contained the answers anyway. And in times like the present, when new and important facts are pressing for places in an already overcrowded curriculum, the student understandably may question the entire laboratory basis of instruction. To anyone who has participated actively in medical research and sought answers to questions that interested him vitally, the experience is totally different from that associated with a routine laboratory experiment.

Quite aside from the results themselves, the former stirs every ability to action and becomes a dynamic experience, never to be forgotten. Furthermore, to be alone in the presence of unknown forces of nature, to set up the methods of investigation, make careful observations, evaluate the results, and draw conclusions constitute a type of experience that in its essentials has a universal application.

How can this type of experience be incorporated into the preclinical phase of education in medicine? And how can learning be made a challenge and exciting adventure, not a deadening process to pass qualifying examinations?

In some measure these elements can be provided by stimulating and inspiring teachers, but unless this is supplemented by an equally challenging need for active participation, the seed may fall on sterile ground. Something is needed to add receptivity at the student end of the line. As Dewey pointed out,[1] the response of the student will depend in large measure on the clarity with which he perceives the relationship of the new knowledge to his past experiences and to his goals for the future.

The Program

An attempt to bridge the gap between educational philosophy and practice in the preclinical years was made in 1924 by Charles A. MacArthur, department of pharmacology, University of Buffalo. He had become convinced that true learning flourished best when students solved problems through their own initiative and efforts.

He began by encouraging interested students to undertake small research projects, often in the nature of extensions of the routine laboratory experiments, and was impressed with a change in attitude among the

students who accepted the challenge.

As the value of such undertakings became apparent, the investigative approach was introduced as part of the regular classwork, and eventually a project of some kind became a required part of the course. While many of the students never progressed beyond the point of satisfying the requirement, each year a few succeeded in acquiring a new interest and perspective. On the whole, however, the success of the program was limited by a variety of difficult circumstances, lost value in competition with other courses, and for a period of a few years was allowed to drift. Recently, with no essential change in objectives, but only with certain improvements in organization, the program has been continued and extended.

From the beginning the pharmacology staff believed that the gains which accrue from experimental project work were significantly different from those arising out of student reviews and research into the current scientific literature. The latter type of independent work has evident value in acquainting a student with the sources of knowledge in a field, and challenging his ability to summarize and communicate facts to others. Furthermore, because of the small amount of supervision required, large numbers of students can be accommodated readily. Yet a library project is looking primarily to the past for guidance, and to authority for information.

Evaluation of the work of others is substituted for creative activity and the effort takes on a distant objectivity that is quite different from the intimate personal sense of possession arising out of one's own struggles against the forces of nature. Is library work not at best a small and convenient substitute for the more inclusive experience of active investigation?

In the program to be described, student projcets have been encouraged that involved a search for unknown answers and amounted to small-scale research type undertakings. Yet it is not proper to judge the results on the basis of research accomplishments. The objective was an experience in the independence of thought and initiative which would provide some of the joy and inspiration of research and would indicate to the student that knowledge may be achieved through search as well as through classroom acquisition.

Student Projects

During the past four years, 270 second-year medical students have participated in the amended program of student projects. Approximately half of these were involved during the first two years while procedures and methods were being modified; the two later classes, totalling 139, have worked under a clearly defined plan.

At the beginning of each year the idea was presented to the class as a regular part of the curriculum for which one afternoon each week had been assigned. Although the direction of the work came under a single department (pharmacology), students were urged to select topics from any field that interested them, provided only that fundamental problems were involved and that facilities and supervision were available within the medical school or associated teaching hospitals. The opportunities and enjoyments of the program were emphasized and every effort made to attract rather than compel the students to participate.

It was made clear from the beginning that each student was responsible for his own schedule and pace of work. While definite times were set for progress reports, no police action was contemplated and the only discipline came through the social pressure to present an instructive and entertaining report to the class at the end of the year. In general, the program was well received by the students, and their comments to succeeding classes led to an increasingly favorable reception.

At the onset it was accepted as a premise that unless the interest and curiosity of the student could be captured early, the gains were likely to be small. It was necessary, therefore, to start with no fixed conception of the nature of the topics to be studied.

Instead, a list of 75-100 possibilities drawn from all branches of basic medical sciences and including psychiatry, public health and medical history, was made available by way of suggestions. The student was encouraged, however, to follow his own preference regardless of the list and to select a topic that was allied to the interests that brought him into medicine or to his outlook for a career.

This led to conferences with each student at which it became necessary for him to define reasons for applying to medical school, and to discuss college majors and minors, outside interests, most interesting course work thus far and anticipated field of practice. Frequently, the student also found it necessary to recognize his own special aptitudes and limitations, and to some among the group the selection of a topic for investigation represented a first experience in academic freedom.

The success of these conferences was reflected in some measure in the enthusiasm or disinterest with which the work itself was carried out. A partial list of the subjects selected by the students is presented in Table I (See page 21).

Selections By Students

The arrangements offered unusual opportunities to the staff to become acquainted with each student and to acquire an understanding of some of the attitudes that influence the success of the educational program as a whole. The incentives underlying choice of topics, for example, offered a clear illustration of the variety and degree of motivation toward medicine. And because of the usefulness of such information in educational planning these have been classified and presented in Table II (See page 22).

It is interesting to find that for 77 per cent of the students the selection was associated with a positive urge of some kind. In about half the group the origin could be traced back to experiences outside the medical school environment.

Obviously, the yen toward clinical medicine was strong at this stage in the training program. Also of importance is the fact that in 23 per cent no definite reason for the choice was evident and motivation appeared to be confused or weak. Some had followed willingly a more forceful classmate or accepted a suggestion with docility but without interest. Others sought the easiest way out of the requirement but would have preferred to spend the time in other fields of study. Continuity of interest and motivation were clearly lacking, but whether this represented a failure of the program itself or an inability of the student to accept such responsibilities cannot be said.

TABLE I

Assay of anticonvulsant drugs through study of anoxic convulsions.
Effects of stimulant and depressant drugs on protozoa.
Action of autonomic drugs on tension in the bladder.
Electroencephalographic changes in the thalamus during anesthesia.
Effect of vasodilator drugs on the ballistocardiograph.
Value of autonomic drugs at various stages in shock.
The visceral component in the action of vasoconstrictor drugs.
Effects of estrogens and androgens on the growth of young rats.
Methods for urea determination in urea clearance studies.
Mechanical principles involved in developing an artificial lung.
Self-selection of dietary constituents by rats ingesting lead.
Synthetic resins as antidotes for morphine and barbiturates.
Experiments in chemical modifications of tissue culture media.
Evaluation of tests for pregnancy.
Antagonisms between antibiotics.
Effect of antihistaminic drugs on antibody formation.
Vitamin B_{12} and citrovorum factor on primitive erythroblasts.
Pathological changes in experimental carbon tetrachloride poisoning.
Studies on the toxicity of inhaled detergents.
Observations on the use of dexedrine in weight reduction.
Management of barbiturate poisoning in local teaching hospitals.
Local problems in industrial toxicology.
Drugs in most common use in local, rural and urban communities.
The effect of stress on the growth of experimental tumors.
Emotional effects of anesthesia and tonsillectomy in children.
History of the introduction of bromides into clinical medicine.
Galen and Galenicals.

As the year progressed some students found a new zest in the work and evidently acquired an appreciation of the relationship to their interests and goals; others, however, remained detached or mildly resistant. The ability to reach a decision and proceed independently showed no particular correlation with academic grades in preceding course work. Vacillation, procrastination and sometimes even childish dependence were evident among students representing the highest as well as the middle and lowest ratings.

The relation of such an individualized program to the more formal course work in a medical school is not easily defined. Obviously, no institution responsible for certifying men in careers that necessitate frequent decisions involving life and death can depend on student initiative and judgment to set its standards. Yet, in developing its educational program to be as effective as possible there is an equally obvious need to make full use of the drives and motivations of each student and to develop the characteristics of independence, initiative and responsibility.

While interest and self-directed study cannot, of course, be relied on to teach the necessary facts from any one field, it was somewhat surprising to find that significant factual gains were made by many students. While the topics often appeared on the surface to be of only local interest, in

TABLE II

Incentives for Selection of Topics

	No.	
Yen toward clinical medicine	41	30
Medical school course work	35	25
Premedical course work	7	5
Experience outside of medical school: home, employment, etc.	16	12
Urge to "do research" without directional focus	7	5
Easy way out of requirement	10	7
A follower. No initial interest	14	10
No good reason. Vague circumstances, chance	9	6
	139	100

the course of the developments they came to involve the chemical nature of the drugs used, mechanism of action, compensatory adjustments, the autonomic nervous system, clinical value, toxic effect—in short the whole intricate functioning of the animal organism. Furthermore, almost regardless of the point of attack, each project led sooner or later to fundamental principles and a broader perspective, illustrating forcibly the unity of the various medical sciences.

Courses in preparatory schools, colleges and professional schools tend to be rigidly prescribed, and while they often are enjoyable in themselves, students rarely feel the responsibility, or enjoy the delights of gratifying their own academic curiosity. Project work offered to many students a first experience in academic freedom.

Distinction of facts from theories and prejudice became important. And sound judgments necessitated knowledge not only from the narrow area of the project itself but often from the whole broad field of animal and human biology. Here was an experience in the fundamental methods of science and in self-discipline comparable to situations in real life.

Any attempt to evaluate the results of such a program on a short-term basis will be open to serious criticisms because of the complexities of the situation as a whole. It has been helpful, however, to obtain the reactions of students, supervising staff and faculty as guides toward planning in the future.

In replies to student questionnaires the idea of experimental projects was recognized as having merit. To them, however, the goal was so clearly the accomplishment of research, and the time so limited that the gains did not justify the neglect of other courses which, because of the subject matter and academic pressure, seemed to them more important.

The preclinical faculty also looked on the program as student research and warned against the dangers of enthusiastic but uncritical self-directed efforts. They pointed out that the discipline of full-scale research requires a different approach.

They doubted that most students were interested in, or capable of, using so much freedom profitably, and felt that the actual gain would be small and the neglect of other obligations considerable. Furthermore, the requests of the students for advice and help interrupted the faculty members in their own research pursuits. They approved of student research on an elective basis and confined to individual departments, but disapproved of making it a requirement for all or of following the lead of the student's own interest.

In contrast to these criticisms from the research viewpoint, the supervising staff interpreted the situation quite differently. Although recognizing that the program involved the methods of research, it was the reaction of the individual to the responsibilities of academic freedom

that was considered important. And although students varied widely in their progress, the staff had no doubt concerning the value of this type of experience in the training program in medicine. From the point of view of educational growth, the intangible gains were considered more important than additions to factual knowledge, and students who responded least satisfactorily were believed to be those who stood in greatest need of the qualities which the program sought to enhance.

Because of the subjective nature of such evaluations, conclusions regarding the values of experimental student projects will be inextricably bound to one's philosophy of education. If it is believed that education in medicine must consist of a formal discipline and a step-by-step advance under close supervision, then the looseness of a self-directed enterprise can contribute little and may even be detrimental. On the other hand, if complete factual coverage in the medical sciences is viewed as neither possible nor essential, but in its place is substituted the goal of a student who understands how to acquire information and has the initiative and curiosity to proceed, then the project type of study offers concrete rewards.

To go deeply into an area of personal interest in contrast to passive acquaintance with the much broader knowledge of some one else encourages qualities that should not be overlooked in the training of physicians. Perhaps the central problem is neither one extreme nor the other, but how far it is advisable to go in the former direction and how this can be done most effectively within the framework of the present educational organization existing within the school.

Discussion

The project method of teaching has been employed in numerous medical schools although published reports are few.[2-6] There are wide variations in the programs and differences in objectives. In some schools short-term projects are substituted for one or more class laboratory experiments, and a small group of students develop the procedures and make the observations jointly. Others assign groups of students to work under a tutor on problems of mutual interest. Still others require each student to complete a relatively long-term study or research project and submit a thesis before graduation. Many schools offer elective opportunities for small scale student research.

The program described above has perhaps permitted a greater range in choice of subjects than some of the others. All approaches contain common elements which deserve more consideration in educational planning than has been accorded them in the past.

Few educators will disagree with the view that at present medical education is erring in the direction of too much factual and technical material and too little humanistic and philosophical emphasis. The need for a more unified training program with less departmental isolation also is widely recognized. Furthermore, responsibility for the education of a medical student rests primarily on the faculty, and the student's role is, in too large a measure, a passive one. Success is judged on the results of examinations covering the factual content of courses and backed by qualifying examinations of a similar nature at the state, national and speciality board levels.

In contrast of all this, work in

experimental projects provides freedom to work in a field of choice and at a pace that is determined by motivation; attraction and creative impulse are the guiding forces in contrast to compulsion and discipline. The goal is not research accomplishment but development of the man; not the memorization of additional facts but the growth of personal characteristics; not the promotion of a career but the development of a spirit of continuing inquiry into the forces of nature.

As a means toward the accomplishment of this goal the teacher becomes a guide and counselor, not a disciplinarian. He concerns himself with the student's understanding of himself, his objectives, his motivation and personality, and secondarily with the mastering of the facts of medicine. This stand is justified in the belief that the initiative to continue learning throughout life and the honest recognition of limitations are a sounder basis on which to carry life and death responsibility than complete knowledge of any body of facts considered essential today.

To reach a proper balance in education between factual knowledge and responsible personal development is one of the tasks facing colleges and professional schools today. The present adventure in education with second-year medical students at the University of Buffalo is offered as a contribution in this direction.

REFERENCES

1. DEWEY, JOHN: "Experience and Education," Macmillan & Co., 1938.

2. BOOKER, W. M.: "Employment of the Project Method as a Laboratory Teaching Techinque," *Journ. Assn. Am. Med. Coll.*, 19:350, November 1944.

3. JORDON, H.: "Use of the Project Method of Teaching Histology," *Journ. Assn. Am. Med. Coll.*, 22:90, November 1947.

4. TEPPERMAN, J., TEPPERMAN, H. M., AND BASS, A. D.: "Experience with a Laboratory Project Program in the Teaching of Pharmacology," *Journ. Assn. Am. Med. Coll.*, 23:114, November 1948.

5. BOOKER, W. M.: "Laboratory Teaching in Toxicology," *Journ. Med. Educ.*, 28:35, April 1953.

6. Personal communications.

International Responsibilities and Opportunities in Relation to Foreign Medical Education

HENRY R. O'BRIEN

DO WE REALLY have any responsibility for medical education in other countries, whether in western Europe or in southeast Asia? If we feel that we do have an obligation, let us consider what it is and how to meet it.

Every physician likes to think of the wise men—Greek, Arab, Italian, English, French—who through the centuries have built up the science and art we practice. In this country we reflect that our early physicians were trained in Europe, that for generations many have gone to London, Edinburgh, Paris, Berlin or Vienna for postgraduate study. Whoever teaches a class or publishes a paper likes to feel that he, in a measure, is making his contribution to the stream of medical thought from which he has drawn. An increasing number of us have taught abroad. The two world wars, the second especially, brought a considerable number of us into contact with other physicians in many countries and frequently with their medical schools. Finally, most of us realize that at the close of the war our country found itself thrust into a position of leadership which spells responsibility for us in many fields.

Obviously, our answer to the opening question is yes. For those in American medical colleges it is natural to ask what medical education abroad needs most and what can be done to help.

Foreign Medical Education

Progress in other countries varies widely. What we know about it is sometimes fragmentary, but our knowledge is growing. The American Medical Association, the World Medical Association and the World Health Organization all are gathering information. The Council on Medical Education and Hospitals of the AMA and the AAMC feel justified in recommending to state licensing boards that they admit to their examinations graduates from selected medical schools in certain countries in Europe and in the Middle and Far East, as well as in South America. As information is gathered and as institutions progress, this list will grow.

Present Evolution

In every country medical education has evolved gradually. Most of the early physicians in the United

Dr. O'Brien is a member of the United States Public Health Service, Department of Health, Education and Welfare, Washington, D. C.

States were trained as apprentices to older practitioners. From that stage education in our country has developed step by step until now we have our modern teaching centers.

The University of Michigan is an illustration. In the fall of 1950 the centennial of the opening of its medical school was celebrated. As part of the program, Dr. F. G. Novy sketched the development of the school for the alumni. Instruction began with 91 students starting two terms of six months each; six graduated in 1851. Then entrance requirements were introduced. The course was lengthened. Laboratories developed in the 80's, including one in the new field of bacteriology. In the first decade of this century some college work began to be required for admission to a course in medicine four years in length. Internships, full-time teaching, residencies, extension teaching, revised curricula—what developments have come in the decades since that time!

Around the world in medical schools today there are illustrations of various stages of that same evolutionary process. In general these schools are following paths of development similar to those we traveled.

A large number of foreign schools may be considered the equivalent of ours. They are on, or near, the list of those recommended by the Council on Medical Education and Hospitals of the AMA and by the AAMC. At the other end of the scale we may think of various inservice plans and particularly of schools for medical assistants, now conducted in some underdeveloped areas. Scattered between these two extremes are schools of an intermediate grade. Possible relations with each of these three groups will be discussed.

If we think only of technical cooperation and "underdeveloped" areas, we can dismiss from consideration any of the foreign schools on the AMA and AAMC lists. They are not underdeveloped; but we cannot be indifferent to them. Science, and medicine in particular, advances by cross-fertilization of ideas. Doctors in San Francisco find it worthwhile to meet with colleagues in New York and Boston. In the same way contacts with London or Stockholm, with Basle, Sao Paulo and Calcutta, through attendance at meetings, visits, sending or receiving guest lecturers, are valuable and necessary. The same values from visits and meetings extend in varying degrees to contacts with weaker schools. To quote Boudreau, "Virtually every country has something to contribute to the common pool of knowledge."

Areas in Critical Need

For the rudimentary medical school, engaged in training medical assistants, we should be prepared to develop understanding and cooperation. Such a school faces problems which have vanished from our country. There are still parts of the world where not 700 or 1,000 people turn to one physician for medical care, but 35,000 people, or even 200,000 scattered over many square miles; where disease conditions are much more devastating than they are here. In these places there is need for many medical assistants, trained simply in three or four years. They in turn may be assisted by "dressers" with perhaps six months of training. Some of our people may go to teach in such schools and their local faculty may come to us for visits or for postgraduate training.

Many medical schools of the world are in a third, or intermediate class. These institutions do valuable work.

They prepare doctors for service in parts of the world where they are badly needed. When some of these doctors come to us for postgraduate work they frequently are excellent people who do well, yet their schools have weaknesses and need strengthening if they are to meet the needs of tomorrow. They may depend entirely on part-time instructors; their laboratories for basic sciences may be inadequate, etc. What can we do to help?

A sound investment will be made by helping those foreign students who come here as graduate physicians and return to teaching positions at home. On the other hand, it is not desirable to encourage foreign students to enter the strenous competition for the limited admissions to our American undergraduate schools, which are geared toward practice in the American environment.

Many foreign medical schools have no restrictions on admission comparable to ours, and often the preprofessional curriculum is under the aegis of the medical school. Hence, foreign students are liable to enroll in our liberal arts colleges as premedical students, with the assumption that admission to medicine itself is then assured. This misunderstanding should be corrected. It is hoped that our liberal arts colleges will make this situation clear to their foreign students, informing them that any "premedic" courses, while meeting the prerequisites for the study of medicine, are cultural disciplines in themselves and carry no implied commitment for admission to a medical school.

Occasionally, it will be possible for us to admit undergraduate students from some of these countries to our medical colleges, either as freshmen or by transfer. The latter will present the problem of evaluating work already done abroad. Today Fulbright funds make it possible for foreign students to come to this country in larger numbers. They must, of course, compete in every way with the applicants from our country. It should be definite that such a foreigner is going to return home, otherwise our training will not help the other country. The man who takes his undergraduate medical work here and goes home can introduce ideas from our colleges and may serve as a measure against which graduates of schools in his own country may be compared. Although we may help at times by teaching one or two undergraduates from other countries which have no medical schools at all, the needs of these areas will really be met only by the founding of local or regional schools.

Opportunity in Graduate Education

An excellent way of serving people from schools in this intermediate group lies in giving them opportunities for graduate education. How is it to be done? Is the usual internship or residency the best medium? Many foreigners are accustomed to didactic teaching, and some postgraduate courses in the United States are organized for this. It is regrettable that the number of review courses in basic sciences has been decreasing, for they meet in part the needs of many foreign physicians coming to this country for the first time. A formal review course followed by hospital experience is for many an excellent combination.

Currently, an increasing number of teaching hospitals have vacancies in their lower resident staff. At the same time, more and more recent graduates of foreign medical schools

are asking for clinical experience in the United States or Canada. This situation presents a challenge; we need them and they need us. Some means of screening applicants from abroad would be very helpful. A graduate of an intermediate medical school is strengthened greatly by one or two years of clinical experience in this country. Returning home, often the person teaches in his own school or practices nearby, raising the level of local medical education.

Exchange Programs

Perhaps an even better method of helping to raise the level of education, either directly or indirectly, is an exchange of teachers. A foreign teacher usually spends three or four months in this country. During this time he is wise if he selects only three or four clinics in his field and really concentrates, instead of hurrying through 10 or 12 places. It is a fortunate man who can attend a meeting, too, and find many people there of whom he has heard and whom he wants to see. We in turn are wise if we receive the visitor courteously, offer him our facilities and discuss our subject with him. He will bring us ideas from his country or from another school he has visited.

Less frequently a teacher spends a year here. Why not, when a foreign colleague writes to us, offer him an opportunity to spend a school year with us? He would become a temporary member of the department, attend lectures, contribute to laboratory sessions and clinical conferences, use the library and even lecture on occasion. If he is wise, he will attempt little or no laboratory research, but will note the techniques and methods other people use. He will learn both material taught and methods of teaching.

After the year with one school he will visit two or three other centers, then go home, where his experience will enrich his own school. The principle limitation of such a program at present is a general lack of funds. If more fellowships can be provided, our schools should rise to furnish such opportunities. Association with a scientist from abroad is of value to both faculty and students here.

Current Progress

Some of our faculty members have been visiting teachers in other countries, at Peking Union Medical College before the war, or elsewhere. There was an active teaching load; the experience was a choice one, enriching lives professionally and personally. Many schools are anxious to have visiting teachers from the United States. Since the war the Unitarian Service Committee has sent teams to various countries to lecture and demonstrate in the medical centers. These visits were made in summer vacations, and the team members contribute their services, receiving only their travel expenses. The World Health Organization also sponsors teams. Fulbright funds can furnish maintenance and sometimes travel and teaching expenses to visiting professors for 20 countries. In Burma, Malaya, Hong Kong, Malta and Nigeria the medical schools invite visiting teachers or research workers. The Mutual Security Administration program in southeast Asia includes plans for visiting teachers in the medical schools of that region. Men on sabbatical leave can be used, although sometimes people are wanted for two full years.

The report of the Committee on International Relations in Medical Education of the AAMC has suggested for some years that each of

our medical schools might be interested in linking itself with a school or group of schools abroad. In 1951 the Public Health Service and the Economic Cooperation Administration proposed a more active association between "sister schools," whereby a medical school in the United States would affiliate with a foreign school by exchange of faculty and residents. Funds to implement such an exchange were provided. Washington University began the program by links with the two medical schools in Bangkok. California is considering such an affiliation with Djakarta. Any school can, of course, send or receive single faculty visitors with less formal arrangements.

All such interchanges require money. It is not every physician who has a legacy to use in travel, or has managed to save substantial sums from his salary or practice. Nor can all of our schools be approached by governmental agencies. Yet it is surprising what other resources can be found. Fulbright funds will support us in many countries, or bring visitors from them to us. Many of our faculties are finding it possible to take part in one of the Unitarian or WHO seminar groups. A sabbatical or other leave makes a visiting professorship practical for many. Fellowships from the WHO, the Rockefeller Foundation, the Public Health Service, International Rotary, the American Association of University Women and various foreign governments bring an increasing number of foreign physicians here. Younger workers are helped financially, as well as professionally, by residencies.

The meeting on medical education in London in August 1953, sponsored by the WMA and WHO has given us an opportunity to examine the whole situation and find still other ways of cooperation.

Our responsibilities as American medical schools to the schools of other countries have been sketched. Ways are multiplying in which we can help. The values to the foreign medical school seem evident, we think, but what we ourselves gain may be less clear.

We Broaden Ourselves

Every visitor makes us, or should make us, examine our own work, defend it against question or modify it from suggestion. Our own horizon is broadened by the visitor's presence. When we ourselves go abroad, we receive what Alan Gregg calls "the inexhaustible benefits of travel." The disease conditions we observe in other countries, the social or professional methods others use in dealing with them, whether like or unlike those employed here at home, are matters for reflection, and inevitably enrich our own work.

It is more and more evident today that helping other countries helps our own. The friendships formed with foreign workers are frequently lasting and rewarding. Gregg goes on to quote: "I have often heard it is wise to go and learn." If in the going we can help another medical school, let us lose no opportunity.

How to Teach Students to Write Clearly in Courses other than English

MARVIN J. BARLOON

I AM SETTING down here in fairly concrete detail a method I have worked out for teaching students how to write what they mean. It took me four semesters to develop this method, and it represents a lot of hard work, much of which was only semi-effective as I fumbled my way along, but for which I was fully rewarded as the method became at last some 90 per cent effective. This percentage is about all I hope for.

I developed the method in my classes in industrial economics. It can be used virtually without adaptation in almost any class in which language is the chief medium of communication, notably economics, political science, history, sociology, philosophy, law and business administration. The technique requires a good deal of individual student guidance, so that for classes exceeding 25 it is probably too much work. It can be used only by professors who themselves know how to write clearly. If you want to adopt it, no royalties will be charged.

We have all been complaining for a long time about the inability of students to write, and our complaint has been vigorous. You may suppose from this that my method will be widely acclaimed and will inaugurate a new era in education. But I am under no such illusions. The heat with which professors criticize poor writing means nothing as to their readiness to do anything about it. Therefore, I am aware that the universal complaint will continue much as though this article had never been written. The details of my method will interest only a small minority who are tired of all the talk and really want to see student writing improved. So, if you're a member of this weary minority, I hope you continue reading this.

But why should you and I teach English? That's not our field. My answer is that for economics, as for the field in which you teach, English is the stuff of which the subject is made. Thought and language are one. In acquiring the skill of writing what he means, the student learns what he means. Furthermore, on the occasions when he really cannot put what he means into coherent verbal form, he learns that he does not mean anything and had better leave the page unspoiled. The process of clear writing compels the making of precisely modified evaluations and the construction of balanced relationships. In my field these mental processes are called economics. After all, we teach our students to *read* economics in textbooks and in library assignments. But we have not there-

Dr. Barloon is professor of economics at Western Reserve University. This article is reprinted from the American Association of University Professors *Bulletin*, Vol. 39, No. 2.

fore been accused of teaching English literature.

Furthermore, you will be promptly rewarded in the quality of your term papers. I have had the experience of reading a set of term papers, four out of five of which were actually interesting reading. Thus, in the very results of the training, a laborious chore is converted into a recreation.

In fact, once he has trained his students to organize their work, a professor should never read a term paper which he does not find interesting. To do so is unfair to the student. The contrary practice grossly unfits the student for his professional life. Professors normally read everything the students turn in. Thus, for four long years the young fellow is persistently drilled in the unwholesome experience of having every sloppy thing he writes conscientiously read. But this is the last time in his life he will have such an experience. In the professional worlds of law, business, social work, architecture and elsewhere, anything written in a pointless or confused manner is totally ignored. The student should learn this fundamental lesson in college. Why should we pay a student a "C" grade (worth money these days in the better job the degree commands) for boring and confusing us? Nobody else will ever do it.

Of course, one has to read any paper which the student is going to do over again. Otherwise, the teacher won't be able to tell the student what defects to correct. We might call these "training" or "exercise" papers. But if the teacher's guidance is effective, the repeated rewriting should eventually produce a finished product, pleasant reading on its own merits. Whenever a term paper is submitted too late in the semester for thorough rewriting, it probably can't be considered an exercise paper; and, if it isn't good reading, the professor should hand it back unread. This should pay dividends in professionally successful alumni, not to speak of the time saved in reading term papers.

Now, my method is based on a rather rigid formula of organization. Students sometimes complain that it confines their self-expression in a strait jacket. In a way, they're right. Certainly my particular form of organization is not the only acceptable one. Lamb, Dickens, Saroyan, Shakespeare and I all have our individual manners in organizing and expressing ideas. So, if the student has an organization which he prefers over mine, he is perfectly free to use it. But, as it has turned out so far, no student ever has had any organization to suggest as even a secondary alternative to mine. So, what he was really protesting about was his preference for no organization at all.

Likewise, you, too, may protest at the rigidity of my organization. You will note that it can stand no variation, that I do not allow for shifts in sequence, that my form lacks variety and nuance. All right. But we cannot teach the student how to vary his organization until he has an organization to vary. We cannot teach him shifts of sequence when he does not even know the significance of sequence. First, he has to learn the elements of organization before he learns how to toy with those elements. That means clarity first. Sparkle and virtuosity are less indispensable and in any event have to be taught only after the lesson of clarity has been driven home to stay. Let's achieve the simple before we tackle the complex. I'm teaching stu-

dents only how to write economic ideas clearly.

In teaching someone how to do something, you have to break the performance down into its elements and teach an element at a time. The element I start with is the paragraph. Some students need to start with the individual sentence, but only a few. Furthermore, those few really do know how to write a sentence once you point out the structure and make it clear they have to. Make them keep their sentences simple, and they'll get along. But the paragraph—that's not so easy. Almost none of your students will know how to set one up. Therefore, they have to be taught this first.

In teaching someone how to do something, you first have to show him how. I start by handing to each student a mimeographed sheet containing a group of sentences taken from a student's paper in an earlier semester. These sentences, just as the student submitted them, constitute a scrambled paragraph: that is, a central message capable of being reduced to a topic sentence accompanied by the necessary sentences of modification, evidence, and supporting reasoning. But the sentences are in a meaningless sequence.

With this before them, I ask the students to tell me the message of the group of sentences. The result goes on the board in a single sentence. Then, by questioning, I obtain the sequence of qualifying sentence, factual evidence, and logic, concluding my blackboard work with a restatement of the total message. The materials on the blackboard thus constitute a clearly organized paragraph. The device of questioning has given the students a sense of having organized it themselves.

It is then necessary to point out the key features of this product. So at this stage I pass to the students a second mimeographed sheet containing the reorganized material just as it now appears on the board. In addition, the transitional words, such as "but," "nevertheless," "of course," and the like, have been written in. The students hardly need to have pointed out the tremendous improvement in clarity and emphasis. Ten minutes will suffice to make clear what a paragraph is: that it is fundamentally a single sentence—but a sentence followed by the necessary modification, evidence and reasoning to clarify and substantiate it. The paragraph begins with the sentence and may well end with the same sentence in different form. This gives the student a conception of what he's going to try to produce.

Now, the real work begins. All students in the class are to write a single paragraph on an assigned subject. The subject should be so worded that it cannot be misunderstood and can be properly dealt with in a single paragraph. For example, I have used with success: "The Most Important Cause of Large-Scale Plant Units in the Iron and Steel Industry." I once used the expression "Large-Scale Operation" instead of "Large-Scale Plant Units" and found that to some people "operation" meant a business firm or company whereas others understood it to mean a plant structure. I make sure that the students have access to readings which will provide them with the necessary information to form a supportable judgment. Their paragraphs are to be organizationally perfect, on the model displayed in class.

Almost every student eventually writes a perfectly organized paragraph on the assigned subject. Those which are perfect on initial submission get a careful explanation as

to why they are perfect. Every other paper gets a detailed explanation of why it is imperfect and must be rewritten. The teacher may do well to type the explanation and staple it to the student's paper. Usually the explanation is longer than the paper. On the second writing the majority of the students will achieve organizational perfection. On the third, they will all do so excepting those who don't really want to.

But they haven't learned how to write a paragraph yet. Nobody really knows how to do something until he can do it by himself on the first try. A flier cannot get a pilot's certificate until he has flown solo. So, another assignment is made. The second subject should relate to the first assignment so that the two may later be combined in a longer paper. For example, the second assignment might be: "The Most Important Cause of Small-Scale Plant Units in the Iron and Steel Industry." Again organizational perfection is the objective—and this time without rewriting. A bare majority of the students may make it.

For the remainder of the class a third assignment has to be made. Those who don't make it on this try either don't want to or else need to be referred to a remedial writing class. So, I throw them to the dogs and proceed. Everyone who's worth the work has now written an organizationally perfect paragraph or two, and this means some 90 per cent of the class. We move to a more complex task.

The students are now to write a multi-paragraph paper, and it, too, is to be perfect. It is to consist of the two perfect paragraphs they have already written, properly related to each other. A suitable topic will be: "Two of the Most Important Causes Bearing on the Size of Plant Units in the Iron and Steel Industry." But the multi-paragraph paper must have unity. Therefore, it must begin with a paragraph, perfectly organized as the other two, and stating the overall message of the paper. And, it must end with a similar concluding paragraph. In other words, the students are to submit a paper of four paragraphs. Only a minority have to rewrite this job; and, with the individual guidance they have had, the teacher can afford to be a little rough and insistent.

It may be thought that all this has been training in English and has elbowed some legitimate economics out of the course. Far from it. In the first place, these writing assignments have been interspersed with the other course activities, readings and discussions, so that the class has not been standing still in other areas. But, in addition, the four-paragraph paper itself has been a solid lesson in economics. The students now know the factors determining plant size in a basic industry far better than they could ever have learned them from lectures and readings, or even from discussion. Each student has been compelled to create his points for himself and then to choose each word and meticulously to rearrange every idea towards a precision of relationships. The result is a precision of economic ideas.

The principles embodied in the above teaching process are so obvious that it embarrasses me to recall that it took four semesters to get the process in order. If it does not embarrass you to read them, here they are:

1. Teach the elements of a performance individually before teaching the whole performance.

2. Show the student what you are trying to teach him to do before expecting him to do it.

3. When a student does something wrong show him precisely what he did wrong, and make sure he understands the criticism before asking him to correct it.

4. A student has not learned how to do something until he has done it by himself without interference or guidance from the instructor.

Now the class is ready for term paper assignments. It is well to get the papers in early enough for rewriting if necessary. Much as you will explain that the term paper must be organized along the lines in which they were drilled, some students just won't take it seriously. So, as you read their term papers, you will come to confused and disorganized work. At this point, I make a practice of drawing a red line across the page and writing in the margin: "Not read beyond here." The whole term paper is returned for rewriting. Nothing need be read which is not clear. And, if it is clear, you will find it interesting, that is, if you are as interested in your field as I am in economics.

For a long time we have berated the high schools and the course in English composition for the writing deficiency of our students. We have been wasting our breath. We do not run high schools or English courses, and we can't do anything about them. Let's talk instead about what we can do. Furthermore, there is good reason to suspect that both the high schools and the English composition courses are doing a reasonably good job in this area. The process I have described, applied to upperclass students, really gets prompt results. Yet, for all the work it entails, it is somewhat perfunctory and reveals a high readiness for learning on the part of the student. In short, he has learned this skill before, in high school and in English composition, and all he needs is a review and some systematic drill. Most of all he needs the demonstration that you take the problem seriously and are willing to help in a systematic fashion. Economics is English, as are the other fields of study which consist of verbal expression.

The professors of English need our help. The courses in composition compartmentalize writing skill; in the student's mind they put it aside as a separate subject and give it no relationship to the other verbal fields. Once the students realize that they always have been and always will be learning English composition in every course they take, outside of mathematics and the natural sciences, they will apply themselves with new vigor in the department of English. Every teacher of English to whom I have spoken about the effort I have described here has expressed the greatest pleasure and interest. The professor of English provides the student with the tools he is to use under our supervision. Let's help him keep those tools in working order. There's no jurisdictional dispute involved.

Predicting Academic Success in New York State Medical and Dental Schools

SHERMAN N. TINKELMAN

MEDICAL AND DENTAL SCHOOLS throughout the country have long been concerned with procedures for selecting competent students. This general problem was given new emphasis in New York State in 1949 when the board of regents established 100 special scholarships to be awarded each year for professional study: 72 in medicine and 28 in dentistry. The scholarships, which carry a total stipend of $3,000 each for four years of professional study, are awarded to young men and women completing their preprofessional training. Therefore, in 1949, the New York State education department was confronted with the immediate problem of selecting from a total of 1,064 candidates the 100 who showed greatest promise of success in medical or dental school.

What constitutes aptitude for the medical and dental professions is, of course, a fundamental issue. The range of abilities necessary for successful practice of medicine or dentistry in their various specialties is broad. Success in one of these areas, however it may be defined, is not necessarily predicated upon achieving high grades in a formal course in anatomy or histology in medical school. Nevertheless, to satisfy the need for a practical criterion, satisfactory achievement in professional school has been generally accepted as at least an initial objective.

Mr. Tinkelman is supervisor of test development for the New York State Education Department, Albany.

Even with the objective thus sharply delimited in scope, the professional schools have been wrestling for many years with the problem of what constitutes a valid prognostic index. The professional schools have employed information derived from a variety of sources——college records, aptitude tests, personal interviews, letters of recommendation, etc., as a basis for selection of students. However, there seems to be little agreement among the schools concerning the use to be made of this information and little consistency of practice.

Although preprofessional college grades have consistently proved one of the best predictors of academic success in professional schools, lack of comparability of such grades effectively eliminates them from consideration in a scholarship competition, where comparability is a *sine qua non*. The New York education department, therefore, based its professional scholarship awards upon a competitive written examination, designed to reveal the probable academic success of a candidate in professional school.

In scope the scholarship examination in 1949 covered both professional aptitude and achievement in preprofessional science. Professional aptitude was measured by the Graduate and Professional Aptitude Test (Booklet I, Form A). This test provides separate scores of verbal and quantitative capacity. The four scores—ver-

bal, quantitative, biology and chemistry—were weighted equally, with correction for differences in dispersion, and scholarships were awarded to candidates in order of combined score.*

It is interesting to note that the New York scholarship examination is quite similar to the aptitude test employed by the Association of American Medical Colleges as a regular part of the medical schools' admission program. Originally the test employed by the Association was the Moss Medical Aptitude Test. In 1946 this test was discarded in favor of the new Professional Aptitude Test, later renamed the Medical College Admission Test. This test consists of four major parts: verbal ability, quantitative ability, modern society and premedical science achievement.

The precise value of aptitude tests in predicting professional school achievement, however, remains a matter of some controversy. Rejection of the Moss test was brought about mainly by the low validities found in various studies of its predictive efficiency. Typical of the results obtained were those of Stuit,[4] who reported validities in several studies ranging from .23 to .32. On the other hand, when Young and Pierson[7] evaluated the Professional Aptitude Test in predicting the first quarter medical school success of 50 students, they found that the highest validity obtained for any part of the Professional Aptitude Test was .24. Ralph and Taylor[2] repeated the Young and Pierson study on the same students over the first five quarters of work and Taylor[5] conducted two subsequent check studies, all with much the same results. Ralph and Taylor recommend a variation of the General Aptitude Battery, developed for use in employment counseling programs, which yielded the following validities for certain of its subtests: verbal, .45; numerical, .39; and spatial, .41.

The New York State professional scholarship program, therefore, is best viewed against the background of selection for medical and dental schools in general. A program of continuing research is indicated if both the scholarship program and the professional school selection programs are to be placed upon a more solid foundation. As a step in this direction, a follow-up study was undertaken of the scholarship candidates in the 1949 competition. The results should be helpful not only in evaluating the effectiveness of the New York State scholarship program in selecting students for its scholarship awards who have outstanding promise, but should also have important implications concerning the general problems of selection and prognosis in professional school.

The Data

The New York State professional scholarship competition is restricted by law to state residents, and scholarship funds are payable only while the winner is enrolled in a medical or dental school in the state. In the state of New York there are eight medical schools, three dental schools and one school of medicine and dentistry. All of these were asked to furnish a record of the academic achievment for the 1949-1950 academic year of New York residents who entered their institutions in September 1949.

Returns were received from all the schools, but one medical school was eliminated from further study because only quarter standing in class

*In 1950 and 1951 this same general framework was maintained but changes were made in the content of the examination. In 1952 new sections in physics and in understanding of modern society were added.

was available. This study, therefore, is based upon a total of 11 professional schools in the state of New York,* enrolling a total of 753 New York residents, of whom 521 were included among the 1,064 candidates in the 1949 competition. Of the 100 scholarship winners in 1949, a total of 79 were admitted to New York State medical or dental schools in 1949, and 69 of these 79 were enrolled in the 11 professional schools studied.

The measures of academic achievement employed by the different professional schools are not directly comparable. Some use letter grades, some use numerical percentages and others use rank in class. To obtain an index of professional school achievement that would be more comparable from one school to another, the scores for each college were reduced to percentile rank among New York residents and then converted to standard scores (mean 50, standard deviation 10) on the assumption of a normal distribution.

For each student who participated in the 1949 scholarship competition, there were available four-part scores: verbal, quantitative, biology, and chemistry. In establishing the scholarship winners, the New York State education department considered it desirable to have the four scores carry equal weight. The actual procedure employed by the department in computing candidates' total scores was to apply a conversion formula which, in a single operation, weighted the part scores, combined them, and converted the total to a standard score with a mean of 500 and a standard deviation of 100.

Comparison of Winners and Nonwinners

If the New York professional scholarship examination affords a valid prognostic index of academic success in professional school, then the scholarship winners as a group should surpass the nonscholarship winners in professional school achievement. Such comparison, of course, should be made within the same professional school. A scholarship winner in one school may have a lower standard achievement score than a nonscholarship winner in another school merely because of a difference in the caliber of the students at the two schools. Need for a second dimension of control in the comparison between winners and nonwinners is indicated by the fact that under the law, the scholarships must be equally divided between New York City and the remainder of the state. A scholarship winner residing outside of New York City may therefore have obtained a lower scholarship test score than a nonscholarship winner residing in New York City.

To obtain a measure of the reliability of the difference in college achievement between winners and nonwinners, at the same time controlling differences in college attended and in area of residence, independent subgroups were established homogeneous to the factors to be controlled. Table I presents this comparison. There are 17 subgroups homogeneous with respect to professional schools and residence zone. For each school-residence subgroup, mean standard achievement scores are pre-

*The 11 professional schools include the following: Albany Medical College of Union University, University of Buffalo School of Medicine, University of Buffalo School of Dentistry, Columbia University College of Physicians and Surgeons, Columbia University School of Dental and Oral Surgery, New York Medical College, New York University-Bellevue Medical Center, New York University College of Dentistry, University of Rochester School of Medicine and Dentistry, State University Medical Center at New York (formerly Long Island College of Medicine), and State University Medical Center at Syracuse University.

Table I

School	Residence Zone	Winners N	Winners Mean Standard Score[a]	Non-Winners N	Non-Winners Mean Standard Score[a]	Difference
A	N.Y.C.	2	57.00	9	51.33	5.67
A	Upstate	3	55.00	27	49.96	5.04
B	Upstate	7	54.28	30	49.43	4.85
C	Upstate	4	51.75	28	51.86	−.11
D	N.Y.C.	1	73.00	16	49.75	23.25*
D	Upstate	2	52.00	5	48.00	4.00
E	N.Y.C.	3	48.33	22	51.86	−3.53
E	Upstate	1	48.00	4	49.50	−1.50
F	N.Y.C.	11	56.65	58	50.71	5.93
F	Upstate	3	55.67	4	38.50	17.17*
G	N.Y.C.	9	59.44	53	49.70	9.74**
G	Upstate	1	59.00	9	44.00	15.00
H	Upstate	6	60.00	11	45.73	14.27**
I	Upstate	2	57.50	35	51.48	6.02
J	N.Y.C.	2	60.00	29	50.28	9.72
J	Upstate	2	66.50	16	47.74	18.75*
K	Upstate	10	57.10	78	49.29	7.81*
Combined[b]		69	56.82	414	49.11	7.71**

First Year Professional School Achievement Scores of Scholarship Winners and NonWinners in the 1949 New York State Professional Scholarship Competition

[a]Standard score was obtained from percentile rank based upon all New York State residents at school, including noncandidates not listed in the table, assuming a normal distribution.
[b]Average standard scores for combined group were obtained by weighting individual means in accordance with Johnson-Neyman method.
*Indicates difference significant at .05 level.
**Indicates difference significant at .01 level.

sented for scholarship winners and for nonwinners.

Individually, the 17 subgroup comparisons show rather wide variation. There is, however, a decided trend in favor of the scholarship winners over the nonwinners. In only three instances do the scholarship winners fail to demonstrate superiority, and these differences are not statistically reliable.

When the individual school means are weighted to obtain an overall picture according to the Johnson-Neyman method,[6] the superiority of the scholarship winners is found to be 7.71 points ($t=6.22$). This difference can be interpreted as representing the difference between a mean standard score for winners of 56.82, equivalent to a percentile rank of 75 based on all New York state residents in the 11 professional schools, and a mean standard score for nonwinners of 49.11, equivalent to a percentile rank of 46. In other words, the average nonwinner in professional school ranks at about the median of his class, whereas the average scholarship winner ranks at the upper quartile.

The reason for the variation found among schools can only be a matter of conjecture. In part, no doubt, the variation is attributable to sampling errors arising from the small number of cases, especially winners, at each school. But it may also be due to actual differences among the schools —in curriculum, in admission procedures or in grading systems. For example, one school may emphasize

more than others the type of aptitude or skill measured in the scholarship examination. Similarly, failure of scholarship winners in any one school to demonstrate superiority may possibly be due to an unusually select student body in that school, or to a grading system which may not differentiate reliably among students.

Correlation between Scholarship Test Score and Professional School Grades

If a scholarship test of this type is to have a broad value in professional school admissions, not only should scholarship winners surpass nonwinners but scholarship test score in general should correlate well with professional school grades. Table 2 presents correlations between scholarship test score and professional school grades for each of the 11 professional schools. These correlations vary from .09 to .68. Ignoring possible differences among schools, the correlation for the total group of 521 students at all 11 schools is .34.

To eliminate attenuation of the total correlation due to differences among schools, analysis of covariance was applied.[3] The correlation within schools was found to be .40. This may be interpreted as the pooled correlation when differences among school means in scholarship test score and differences among school means in college grades are eliminated. A correlation of .40 is by no means sufficiently high to allow prediction of college scores in individual cases with any large degree of confidence. However, it is significantly greater than zero and cannot reasonably be ascribed to random errors of sampling.

Table 2

School	N	Mean Scholarship Test Score	Mean Professional School Achievement Score	r
A	41	524.6	51.0	.42
B	44	429.9	51.5	.30
C	33	507.6	52.0	.09
D	24	471.4	50.5	.56
E	30	556.6	51.1	.19
F	76	490.8	51.1	.39
G	72	577.4	50.3	.53
H	19	550.7	51.6	.68
I	40	491.7	51.6	.43
J	49	499.7	50.4	.59
K	93	558.9	50.5	.34
Combined	521	519.5	50.9	.34

Correlations between Scholarship Examination Score and First-Year Professional School Achievement Scores for 521 Candidates in the 1949 NYS Professional Scholarship Competition

Relative Validity of Subtests

As indicated, the scholarship test contains four subtests. The aptitude section includes a test of verbal ability and a test of quantitative ability. The achievement section includes a test of biology and a test of chemistry. Each of these four subtests was weighted in inverse ratio to standard deviation to obtain a composite test score. Some question may be raised concerning this procedure. Do the four subtests actually have equal validity in predicting professional school achievement?

It would appear from Table 3 that, despite considerable variation in the picture from school to school, the chemistry achievement test in general offers the best single prediction of first year grades. The achievement section as a whole offers a better prediction than the aptitude section. When the difference between the achievement correlation, .40, and the aptitude correlation, .26, is tested for statistical significance in accordance with the usual technique for testing the significance of a difference between two nonindependent correla-

Table 3

School	N	Verbal	Quantitative	Combined Aptitude	Biology	Chemistry	Combined Achievement	Total Test
A	41	.36	.40	.45	.20	.37	.32	.42
B	44	.07	.17	.14	.29	.36	.38	.30
C	33	—.22	.16	—.04	—.01	.31	.17	.09
D	24	.26	.50	.42	.43	.56	.58	.56
E	30	—.11	—.02	—.07	.48	.19	.37	.19
F	76	.29	.24	.30	.39	.41	.40	.39
G	72	.35	.36	.41	.36	.50	.54	.53
H	19	.42	.33	.55	.72	.55	.65	.68
I	40	.11	.33	.25	.37	.52	.52	.43
J	49	.39	.50	.24	.33	.57	.55	.59
K	93	.21	.16	.28	.28	.24	.23	.34
Total	521	.17	.26	.22	.30	.34	.35	.34
Within Schools	—	.21	.27	.26	.33	.39	.40	.40

Correlations of Scholarship Subtest Scores and First-Year Professional School Grades (521 Students at 11 Professional Schools)

tions, the difference is found to be significant at the .05 level.[1]

Summary of Results

1. Scholarship winners, as a group, tend to surpass nonwinners in first-year professional school achievement. The average scholarship winner ranked near the upper quarter of his college class, whereas the average nonwinner ranked near the median.

2. The individual school correlations between scholarship test score and professional school grades varied from .09 to .68. The pooled "within school" correlation between scholarship test score and professional school grades for all 521 scholarship candidates in 11 professional schools was .40.

3. The achievement section of the scholarship examination appears to offer a significantly better prediction of first-year professional school grades than does the aptitude section. The combined achievement section has a "within school" correlation of .40 as compared with .26 for the combined aptitude section. The chemistry test had the highest "within school" correlation of any subtest with .39, whereas the verbal section had the lowest with .21.

Implications

In the sense that scholarship winners achieve significantly superior grades than nonwinners during the first year of professional school, the New York State professional scholarship examination would seem to be a valid instrument for the purpose of selecting candidates with outstanding promise of success in professional school. That the scholarship examination may have some general prognostic value to the professional schools in their admissions program would also seem to be indicated by the positive, although low, correlation between scholarship test score and professional school achievement.

The validity of this type of prognostic test, upon the evidence of this study, would seem to be somewhat greater than the validity as indicated

in the studies reported by Ralph and Taylor. However, the investigation tends to confirm their conclusions that the verbal section is weak. No analysis has been made of the scientific, social and humanistic vocabulary sections of the verbal test. Ralph and Taylor's evidence indicates that the scientific vocabulary section has fair validity, but that the other two sections probably result in lowered overall validity.

This tentative conclusion seems warranted: that the achievement tests probably constitute better indicators of professional school achievement during the first year than the aptitude tests, and greater weight should be placed upon the achievement tests in the total battery. The aptitude test apparently is in need of refinement, but offers promise of making a supplementary contribution.

The verbal test, although a poor index of probable success in first-year professional study, may be a good index of success in later years of professional school work. In addition, it has been maintained that a more intelligent physician is preferable to a less intelligent physician, whether a test of verbal capacity correlates high with medical school grades or not. In this frame of reference, equal weighting of subtests, or indeed any other weighting derived by introspection, may be quite defensible. If the scholarship examination is aimed specifically at predicting professional school success, however, it would seem that consideration should be given to revision of the relative weights of the subtests based upon multiple correlation techniques.

REFERENCES

1. LINDQUIST, E. R.: "Statistical Analysis in Educational Research," Houghton Mifflin, New York, 1940.

2. RALPH ROY B. and TAYLOR, COLVIN W.: "A Cooperative Evaluation of the Professional Aptitude Test and the General Aptitude Test Battery," *Journ. Amer. Med. Coll.*, 25: 33-40, 1950.

3. SNEDECOR, GEORGE W.: "Statistical Methods," Collegiate Press, Ames, Iowa, 1946.

4. STUIT, DEWEY B.: "The Prediction of Scholastic Success in a College of Medicine," *Educ. and Psych. Measurement*, 1:77-84, 1941.

5. TAYLOR, COLVIN W.: "Check Studies on the Predictive Value of the Medical College Admission Test," *Journ. Assn. Amer. Med. Coll.*, 25:269-271, 1950.

6. WALKER, HELEN M. and LEV, JOSEPH: "Statistical Inference," Henry Holt and Co., New York, 1953.

7. YOUNG, RICHARD H. and PIERSON, GEORGE A.: "The Professional Aptitude Test, 1947—A Preliminary Evaluation," *Journ. Assn. Am. Med. Coll.*, 23:176-179, 1948.

The Teaching of Psychology Courses in Medical Schools

LOUIS D. COHEN, IVAN MENSH, G. K. YACORZYNSKI

SYMPTOMATIC OF medical school curriculum expansion in the direction of family and home care programs, human biology and comprehensive and preventative medicine programs is the increased interest and utilization of psychology courses. The American Psychological Association, reflecting this interest, has conducted symposia and discussions at its annual meetings in 1952 and 1953 specifically concerned with the content of psychology courses for medical students and a consideration of most effective teaching methods.

Throughout the world curriculum changes are being designed to focus students' attention on man as an individual related to his environment. In a recent report of the World Medical Association concerning the problem of standards of medical education,[1] an analysis of replies to a questionnaire responded to by 26 national medical associations reveals that while normal psychology is not as universal a subject as anatomy and physiology, it is nonetheless required for admission to some medical schools and is required or recommended in the curriculum of others.

Of the 26 countries, representing 288 medical schools and 18 premedical schools, four (Belgium, Bulgaria, Denmark and Iceland) have provisions for psychology in the premedical training program. Generally in these countries, psychology was a part of the required philosophy course given to all university students. Seven countries provided for courses in normal psychology in the preclinical years. These were Australia, Canada, Ireland, Great Britain, Hungary, India and the United States. This program extended from a brief course to the extensive Canadian course, which covered history of psychology, effective study habits, origin and control of human activities, affective behavior, individual differences and applications of psychological principles to preventing mental disorders. There are four countries—Bulgaria, Chile, Greece and the Netherlands—that reported some emphasis on psychology in the medical school clinical years. From the report, one gathers that these were lectures by the professors of psychiatry and neurology that were incorporated into the usual courses on mental illness.

In examining the situation in the United States, a recent survey[2] indicated that 73 per cent of the medical schools in this country have psychologists on staff or faculty and that among the 58 schools reporting psychologists in their faculties or staff, there were 225 psychologists, of whom 130 were full-time members of their faculties.

One may recognize that the United States is typical of the general world trend for increasing concern with fundamentals of human behavior as a part of the medical school curriculum.

The American Psychological Association symposia recognized that there were at least four training periods that needed careful curriculum reevaluation. These were: (1) premedical training, (2) preclinical

Dr. Cohen is associate professor of clinical psychology and psychology at Duke University School of Medicine. Dr. Mensh is associate professor and head of medical psychology, department of neuropsychiatry, Washington University School of Medicine. Dr. Yacorzynski is associate professor of nervous and mental diseases at Northwestern University Medical School.

training, (3) clinical training, (4) graduate training for those pursuing study in medical specialties.

In considering the premedical training period, the necessity of limiting the number of required courses and saving time in the undergraduate curriculum for freer choice of electives led to the discussion of the advisability of setting up special courses in psychology for students entering medicine. In the preclinical period, one problem under consideration was the choice between a factual presentation of information relevent to personality, and/or an experimental orientation concerned with the methods of acquiring new information about human behavior. In the clinical period, the emphasis on individual instruction seemed to afford an opportunity for passing on the techniques of individual psychological examination, but the necessity for passing on such skills to the medical students was in question.

In the graduate training of medical specialists, while the symposia recognized the already existing close relationships of psychology with psychiatry and pediatrics, a question was raised as to the potential effectiveness of the contributions of psychology to other specialties, such as internal medicine, dermatology and surgery, and the best methods of contributing to the training of such specialists in problems of human behavior.

Two additional problems were noted. It was recognized that the medical student, as a complex social organism reflecting a number of different attitudes, might himself warran considerable study. It was suggested that medical students, emphasizing in their basic attitudes primary concern with theoretical or practical issues, might be differently receptive to broad social and individual problems as they might arise in their future practice. A second point was the particular orientation of the medical school itself. It was felt that certain medical schools set as their own private orientation the task of preparing practitioners. Other medical schools were more concerned with developing students who would be primarily concerned with research. The attitudes of the medical schools themselves were therefore likely to influence attitudes toward people. Both issues seemed to warrant considerable research effort.

The diversity of methods and experience in the teaching of psychology in the medical schools represented by the discussants and participants in the symposia suggested the advisability of organizing a more extensive meeting in order to share experiences. There seem to be particular divergencies in teaching in the first preclinical year and some differences in experience in dealing with the clinical years. Some of the psychologists reported beginning research on different teaching methods.

To organize an opportunity for mutual expression and exchange of ideas, a committee was set up to study the possibility of arranging time and place and securing essential financial support for participants. It was hoped that such a meeting which might be held in 1954 would facilitate the preparation of recommendations to be presented to the special 1956 meeting of the American Association of Medical Colleges when this general problem will be discussed.

REFERENCES

1. The World Medical Association, *Standards of Medical Education.* Report I, New York, 1950.

2. MENSH, I. W.: "Psychology and Medical Education:" Report of the Sub-Committee on Psychology and Medical Schools. Washington University, St. Louis, Mo. 1952.

Editorials and Comments

C.R.E.F. and Retirement Stability

THE TEACHERS INSURANCE and Annuity Association, which was established in 1918 by the Carnegie Foundation for the Advancement of Teaching, has recently taken another important step in its effort to help college teachers protect their later years with adequate annuity. In March 1952 the College Retirement Equities Fund was established by a special act of the New York State legislature and in July 1952 it took its place as a separate but companion corporation to T.I.A.A.

T.I.A.A. contracts made 20 or 30 years ago are being met faithfully every day of the year as teachers reach retiring age, but the monthly payments which had looked quite adequate when contracted for in 1920 are found now, when called for, to be grossly inadequate due to the effects of inflation and the shrunken value of the dollar.

With the hope of preventing subsequent generations of disappointed annuitants and with the belief that one of the best hedges against inflation is common stocks, C.R.E.F. has been formed and T.I.A.A. clients are permitted to invest up to one-half of their total pension contributions in the equities fund. C.R.E.F. funds are invested entirely in common stocks or other equity investments. C.R.E.F. annuity contracts make no commitment to pay a fixed monthly annuity to the beneficiary after retirement. Instead C.R.E.F. contracts to pay a pension in a fixed number of units, the dollar value of which varies with stock prices. The new fund is thus designed to permit participants to enjoy the advantages of inflation on at least a part of their funds while the other part, under T.I.A.A. control and regulations, remains for safety's sake on a fixed-dollar basis and unavoidably suffers the harmful effects of inflation.

Arthur W. Viner, research staff member, Committee for Economic Development, states,* "If C.R.E.F. is successful, similar plans are sure to be offered to the public in general. Many in the insurance fraternity have looked with a jaundiced eye on investment in common stocks by life insurance companies. But if the C.R.E.F. plan catches on, there is no doubt that insurance companies and private institutions would do their utmost to give the general public the same opportunity for a secure old age as the teachers now have. And, as the insurance men are well aware, T.I.A.A. and C.R.E.F. are administered by noted bankers, educators, lawyers and investment experts. This is not a wild-eyed scheme or gadget but a carefully worked-out plan with a practical aim. . . . . Unless the trend of stock prices turns downward and continues to drop for a generation, the young instructor who joins T.I.A.A.-C.R.E.F. today will be assured of a relatively secure old age."— D.F.S.

*Arthur W. Viner: "A New Plan for Retirement Stability," Dun's *Review and Modern Industry*. September 1953.

The 1954 Teaching Institute

THE ASSOCIATION WILL HOLD the second in its series of six teaching institutes at French Lick, Ind., October 10-15, 1954, immediately prior to the 65th Annual Meeting. This Institute will focus on pathology, microbiology, immunology and genetics.

The general pattern will be similar to that of the 1953 Institute. Although many schools would like to have more than one participant, the size of the group must be limited if the discussions and the interchange of ideas are to be effective. In selecting participants, the committees hope to achieve a balanced overall representation of the several disciplines and areas to be explored at the Institute. Within a few weeks invitations will be sent to one teacher from each medical school in the United States, Canada, Puerto Rico and the Philippines. In order to provide continuity and coordination, a few teachers who attended the 1953 Institute, and observers from the subject areas (anatomy, histology, embryology and anthropology) of the 1955 Institute, will also be invited.

The Committee on the 1954 Teaching Institute, which is responsible for the organization and planning of the Institute, is: Douglas H. Sprunt, professor of pathology, Tennessee, chairman; Robert A. Moore, vice-chancellor, Pittsburgh, co-chairman; Granville A. Bennett, professor of pathology, Illinois; Israel Davidsohn, professor of pathology, Chicago Medical; Charles A. Evans, professor of microbiology, Washington (Seattle); Colin M. MacLeod, professor of microbiology, New York University; James V. Neel, associate professor of internal medicine, and associate geneticist, Institute of Human Biology, Michigan; Robert E. Stowell, professor of pathology and oncology, Kansas; Emory D. Warner, professor of pathology, Iowa; Stanley E. Dorst, president, AAMC; George Packer Berry, chairman, AAMC Committee on Teaching Institutes and Special Studies; John M. Stalnaker, secretary, AAMC Committee on Teaching Institutes and Special Studies.

The four basic areas for discussion, and the subcommittee which will be responsible for each area, are:

THE OBJECTIVES OF TEACHING: Granville A. Bennett, chairman; Walter J. Burdette, associate professor of surgery, Louisiana; Israel Davidsohn, professor of pathology, Chicago Medical; Sidney C. Madden, professor of pathology, California (Los Angeles); Walter J. Nungester, professor of bacteriology, Michigan, Alwin M. Pappenheimer Jr., professor of microbiology, New York University.

PROBLEMS OF THE TEACHER: Emory D. Warner chairman; D. Murray Angevine, professor of pathology, Wisconsin; William C. Boyd, professor of immunochemistry, Boston; Edwin A. Lawrence, professor of surgery, Indiana; R. G. E. Murray, professor of bacteriology and immunology, Western Ontario.

INTERRELATIONSHIPS: Robert E. Stowell, chairman; James W. Moulder, associate professor of biochemistry, Chicago; Ira T. Nathanson, associate clinical professor of surgery, Harvard; James V. Neel, associate professor of internal medicine, and associate geneticist, Institute of Human Biology, Michigan; Robert F. Parker, associate professor of microbiology and of medicine, Western Reserve; James P. Tollman, professor of pathology and bacteriology, and dean, Nebraska.

PROBLEMS OF THE STUDENT: Charles A. Evans, chairman; Thomas P. Almy, associate professor of neoplastic diseases (medicine), Cornell; John B. Graham, assistant professor of pathology, North Carolina; William B. Wartman, professor of pathology, Northwestern; Dennis W. Watson, professor of bacteriology and immunology, Minnesota.

The chairman of the Institute and the four subcommittee chairmen constitute the Executive Committee.—J. M. S.

Another Responsibility of the Medical School

THOUGH THE PROBLEM of fee splitting has been with the medical profession for many years it is now being aired in the public press[1, 2] and brought to the attention of the profession as a whole[3] more widely than at any other time in history.

The reasons for fee splitting are easy to find. Patients are willing to pay high fees for the services of the surgeons who operate upon them but begrudge fees paid to the lowly medical man who studies the case and comes to the conclusion that the solution of the problem lies through proper surgical operation. It has oftimes been found expedient therefore to include in the surgeon's bill (with or without the patient's knowledge) a fee for the referring physician.

The dangers in this arrangement are obvious upon serious thought. It offers a financial premium to the medical man for referring patients to the surgeon, and this is wrong in that it may well influence his better scientific judgment in such cases. It is unfair to the surgeon in that it makes it difficult for him to decide open-mindedly whether the referred case requires surgery or not, and it requires him to submit a bill to the patient in excess of the charges he would personally make. The patient may be cheated in the sense that such bilateral arrangements between physicians tend to place the matter of fee ahead of the primary question of the management of his illness.

Our medical schools have a direct responsibility to make sure that each of their graduates is made thoroughly aware of the following facts: that fee splitting is a very easy habit to drop into as one establishes himself in the practice of medicine; that fee splitting is ethically wrong in that it permits financial considerations to bias the scientific judgment of both medical man and surgeon; that the organized profession in its deliberative moments in such organizations as the American Medical Association and the American College of Surgeons has condemned and decried the practice of fee splitting; that acceding to local practices of fee splitting in establishing a practice will almost surely lead to the deterioration of the standards of medical care and of the mutual respect which should exist between medical man, surgeon, and patient; that whatever bill a medical man may have to present for services rendered to a case eventually requiring surgery, should be presented directly to the patient and not made part of the surgeon's bill.—D.F.S.

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1. STEVEN M. SPENCER: "Patients for Sale," *Saturday Evening Post*. Vol. 225, No. 29, January 16, 1954.

2. GREER WILLIAMS: "Unjustified Surgery," *Harper's*, Vol. 208, No. 1245, February 1954.

3. *Bulletin of the American College of Surgeons:* "Statement on Local Societies Organized to Eradicate Fee Splitting," Vol.39, No. 1, January-February 1954; PAUL R. HAWLEY: "Out of the Mouths of Babes," Vol. 38, No. 2, March-April 1955; "The Strange Case of Loyal Davis," Vol. 38, No. 4, July-August 1953; GREER WILLIAMS: "The Columbus Five-Year Cure for Fee Splitting," Vol. 37, No. 2, July-August 1952.

Protecting Medical Students Against Tuberculosis

THE TOLL which tuberculosis has taken among medical students has always been a matter of serious concern to medical school and hospital administrators. That the incidence of clinically active pulmonary

tuberculosis was greater in medical students than in the population at large of a similar age was repeatedly reported in literature between the years 1931 and 1941.[1,2,3]

Among the important reasons given for the unusual incidence of tuberculosis among medical students were: exposure to diagnosed active cases on the tuberculosis wards, exposure to undiagnosed active cases on the general medical wards and in the outpatient departments, exposure to infected cadavers in the autopsy room, and the relatively unhygienic life of medical students with little opportunity for recreation and outdoor living.

Between 1936 and 1945 facts contributed by Amberson[4], Rich[5], Pinner[6], Myers[7] and others led to the conclusion that a program of tuberculin testing of medical students and nurses with chest radiograms as indicated was exceedingly important and many schools established such a program. An added feature in this program in recent years has been the offering of BCG vaccination to those students found to be tuberculin-negative on the theory that liability to the development of clinical tuberculosis is greatest among those students who have never before been infected with the tubercle bacillus and are now heavily exposed. Other essential parts of the preventive program include the photofluorographing of the chests of all hospital admissions, and specific instruction of medical students in the technique of making a chest examination with safety.

A recent report by W. A. Abruzzio and R. J. Hummel[8] shows that among 62 United States medical schools reporting there were 557 cases of clinical tuberculosis for the 166,959 student years included in the study between 1940 and 1950. It is encouraging to note, however, that most of the 62 schools reporting have established a definite tuberculosis control program and that 19 have included the offering of BCG vaccination to the negative reactors. "Of approximately 4,400 students thus vaccinated, only three have contracted tuberculosis—none of whom became positive reactors. Not one truly vaccinated student out of 4,400 with over two to six years of heavy exposure has contracted tuberculosis." According to this report the University of Wisconsin has been using BCG vaccine for the past 10 years, the University of Illinois for the past eight years, the University of Buffalo for the past six years and 16 other schools from two to five years.

The spectacular reduction in the incidence of clinically active tuberculosis which is reported as having taken place in those medical schools reporting active tuberculosis control programs[8] in operation can leave no doubt that such programs are urgently needed in all schools and will be well worth what they cost.—D.F.S.

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1. H. W. Hetherington, F. M. McPhedran, H. R. M. Landis and E. L. Opie: "Tuberculosis in Medical and College Students," *Archives of Internal Medicine*. 48:734-763, 1937.
2. N. B. Herman, F. H. Baetjer, J. A. Doull: "Tuberculosis Infection in Medical Students," *Bulletin of the Johns Hopkins Hospital*. 51:41-55, 1932.
3. W. B. Soper, J. B. Amberson Jr.: "Pulmonary Tuberculosis in Young Adults: Particularly among Medical Students and Nurses," *American Review of Tuberculosis* 39:9-32, 1939.
4. J. B. Amberson: "Tuberculosis in Medical Students, Internes, Nurses and Laboratory Workers," New York National Tuberculosis Association, 1941.
5. A. Rich: "The Pathogenesis of Tuberculosis," Springfield. Charles C. Thomas. 1944.
6. M. Pinner: "Pulmonary Tuberculosis in the Adult: Its Fundamental Aspects." Springfield. Charles C. Thomas. 1945.
7. J. A. Myers: "Immunity in Tuberculosis," *Journal of the American Medical Association* 146:1492-1500, 1951.
8. William A. Abruzzio and Rufus J. Hummel: "Medical Progress Tuberculosis: Incidence Among American Medical Students, Prevention and Control and the Use of BCG," *New England Journal of Medicine*. 248:722-729, April 23, 1953.

NEWS DIGEST

Congress on Medical Education

The 50th Annual Congress on Medical Education and Licensure was held February 7-9 in Chicago. The meeting was sponsored by the Advisory Board for Medical Specialties, the Federation of State Medical Boards of the United States, and the Council on Medical Education and Hospitals of the American Medical Association.

Medical Education: Problems in medical education were discussed at both morning and afternoon sessions on February 8 and 9. Dr. H. G. Weiskotten, council chairman and presiding officer of the first morning session, opened the program with a review of the history of the congress, first held in 1904.

Dr. Edward J. McCormick, president of the AMA, discussed the importance of stressing in undergraduate medical education instruction in fundamental professional ethics, public relations and medical practice.

A matching plan for physician service in the armed forces was suggested by Dr. Frank B. Berry, assistant secretary of defense, (health and medical). The plan would help solve the problem of interruptions in education and training of the young physician.

A survey of medical students found that 27 per cent preferred service in the Army, 37 per cent the Navy and 36 per cent the Air Force. When asked when they would want their service, 39 per cent preferred it after internship, 15 per cent after two years of training and 46 per cent after residency.

Dr. Berry suggested that under the matching plan students would fill out cards giving such information as status on reserve commission, choice of branch of service, time of service and type of residency planned. These cards would be sent to Selective Service and would be used as bases for selection and deferment.

However, since many physicians are eliminated by physical qualifications and others are deferred, perfect matching would not be possible. Final decisions, even under the matching program, would have to be judged by local draft boards on the basis of individual cases. Any matching program of this sort, according to Dr. Berry, would need the cooperation of medical schools, students, draft boards, etc.

On February 8, the luncheon program included a panel discussion, "As the Twig Is Bent," on the subject of professional orientation. Panel members were Dr. Edward J. McCormick, president of the AMA; Dr. R. W. Waterson, executive secretary, Alameda-Contra-Costa Medical Association; Dr. J. Murray Kinsman, dean, University of Louisville School of Medicine and Dr. Vernon W. Lippard, dean, Yale University School of Medicine. Leo E. Brown, director of public relations, AMA, served as moderator.

The panel was asked: Is there a need for greater emphasis on such subjects as medical ethics, medical economics, how to set up a practice, public relations and human relations, and medico-legal problems? Whose responsibility is it to meet this need?

Panel members were in general agreement that there is definite need for medical students to receive more information on such practical aspects of their careers as fees, costs of practice and relationships with patients.

Too often the young student comes out into practice insecure and uninformed on the problems he will face with his patients, with other doctors, etc. He assumes a defensive and iso-

lated attitude, and in the words of one panel member, "fits very uncomfortably into the community."

Courses by men in general practice, or information supplied by health organizations, might meet this need without placing an additional burden on the faculties of medical schools, although the final responsibility for getting this practical and helpful material to students would rest with the schools. The panel suggested that perhaps seminars, or guest lectures by general practitioners, law school faculty members, etc., would assist the regular faculty in orienting the students toward their careers.

On February 9, panel discussions were also held on "The Objectives of Postgraduate Medical Education." The panel was composed of Dr. George N. Aagaard, dean, Southwestern Medical School of the University of Texas and chairman, AAMC Committee on Continuation Education; Dr. Roscoe L. Pullen, dean, University of Missouri School of Medicine; and Dr. U. R. Bryner, president, American Academy of General Practice.

One of the main objectives, according to the panel, was that the doctor continue his professional growth so that he may make a greater contribution to the nation's health.

A second panel, consisting of Dr. John B. Truslow, dean, Medical College of Virginia; Dr. Robert Parkin, director of postgraduate education, University of Wisconsin Medical School; Dr. Mahlon Delp, director of postgraduate education, University of Kansas School of Medicine, and Dr. John Conlin, director of medical information and education, Massachusetts Medical Society, exchanged ideas on 'how to achieve the objectives of postgraduate education." Several methods of reaching doctors for postgraduate courses were suggested, among them home courses, reading seminars, and meetings with colleagues.

An additional topic, "The Facilities, Faculty and Finance of Postgraduate Programs," was discussed by Dr. Robert Howard, director of postgraduate education, University of Minnesota Medical School; Dr. Frode Jensen, assistant dean, New York University Post-Graduate School of Medicine and Dr. Franklin Amos, director of professional education, New York State Department of Health.

Reports: Dr. Frank G. Dickinson, director of the AMA Bureau of Medical Economic Research, reported on the findings of a seven-year study of distribution of physicians in the United States. According to this survey, which divided the country in 757 marketing areas, the number of persons per active practitioner varied from 5,100 in the area around Monticello, Utah, to 380 around Rochester, Minn. Actually, because the areas with the fewest physicians are the most sparsely populated sections, the redistribution of only 361 doctors would help this condition. Dr. Dickinson pointed out that in terms of time, a patient 30 miles away from his doctor today is closer than a patient four miles away fifty years ago.

The survey touched on the subject of physicians in the armed services during World War II. At that time 40 per cent of the nation's physicians were in service, leaving 60 per cent to care for the 91 per cent of the population who remained civilian. During this time, civilians economized on the use of civilian physicians, Dr. Dickinson stated, and most indices of health indicate improvement during the national emergency—a situation which would probably repeat itself in any future emergency.

Dr. Douglas D. Vollan, of the AMA Council on Medical Education and Hospitals, spoke on new methods of meeting the demands for postgraduate education. Dr. Vollan said that television, recorded programs, film strips and medical reading are coming into increasing use as doctors show more interest in postgraduate education. Reports from about 5,000 physicians out of 17,000 chosen at random indicate that they spend an average of 83.3 eight-hour days a year in keeping themselves up to date on medical matters.

The question "Is Osteopathy a Cult?" was answered in the affirmative in a report by Dr. George W. Covey, former member of the Nebraska Board of Medical Examiners. On the evidence of the catalogues of the schools of osteopathy, Dr. Covey feels that they reaffirm their separation from the standard schools of medicine. By references to the founder of osteopathy, Andrew Still, and emphasis on the "osteopathic viewpoint," these colleges, according to Dr. Covey, seek to resist the trend of some osteopaths toward medicine and, therefore, osteopathy still can be correctly termed a cult.

Also included in the two-day session were discussions on the qualifications of foreign medical students, and highlights from the survey on preprofessional education directed by Dr. Aura Severinghaus. Reports on progress were presented by the National Fund for Medical Education and the American Medical Education Foundation.

Federation: Two sessions of the Federation of State Medical Boards were held during the Congress. The first of these, on Sunday, February 7, included reports of officers, appointments of committees and addresses by Dr. Bruce Underwood, secretary, Kentucky State Board of Health; Dr. Willard C. Rappleye, dean, Columbia University College of Physicians and Surgeons, and Dr. S. Howard Armstrong, director of medical education, Cook County Hospital, Chicago.

At a luncheon meeting on February 9, members of the federation conducted their annual business session. Dr. Elmer W. Schnoor, Grand Rapids, Mich., was installed as president and the following officers were elected: president-elect, Dr. M. H. Crabb, Fort Worth, Texas; vice president, Dr. K. D. Graves, Roanoke, Va.; secretary-treasure (re-elected), Dr. Walter L. Bierring, Des Moines, Iowa.

Executive Council

The February meeting of the Executive Council of the Association of American Medical Colleges was held at the Palmer House, Chicago, on February 5 and 6.

Two new staff appointments were announced at this meeting. Dr. William Hubbard, associate dean of New York University College of Medicine, has accepted the position of associate secretary of the AAMC. He will devote part time to the Association beginning this month, and will assume full-time duties in July. Roy G. Parry has assumed the position of advertising manager of the Journal of MEDICAL EDUCATION.

In answer to inquiries on policies relative to the transfer of students from a graduate school to a medical school, the Council issued the following statement:

1. When students registered in the graduate school of a university take courses in the medical school, which are the regularly required courses for medical students, such graduate students should be expected in every instance and in every respect to meet the same standards of accomplishment as are expected of medical students.

2. Students who obtain credit, while registered in the graduate school of a university, in courses in the school which are regularly required of medical students may be permitted to apply that credit, without question, toward their M.D. degree if they transfer from the graduate school and are permitted to officially register in the medical school.

3. The accumulation of credits by a graduate student in courses usually required of medical students will in no way obligate a medical school to accept such a person as a medical student. On the contrary, the committee on admissions of the medical school will continue to make its decisions as to the admissability of a student purely on its judgment as to his eventual fitness for the medical profession.

4. Whether a university or medical school wishes to award credit toward an advanced academic degree, such as the M.S. or Ph.D. for work completed in regular medical school

courses, is a matter for the university itself to decide in accordance with that institution's rules relating to graduate degrees.

The Council also approved a statement offering no objection to federal military scholarships provided they are offered under proper conditions.

On the subject of summer clinical clerkships in Army hospitals it was the consensus that the matter should be left entirely to the individual schools, but that the clerkships should be offered on a purely voluntary basis.

The Committee on Planning for National Emergency was instructed to restudy the report, "Medical Education in Time of National Emergency," and revise it, with special consideration on current problems. After revision the report should be submitted to the Joint Committee on Medical Education in Time of National Emergency.

Upon recommendation of the inspection committee, the University of British Columbia Faculty of Medicine was voted into full affiliate institutional membership in the Association. Since authority to make this decision was voted to the Council at the October 1953 meeting, this is the final action on this school.

The decision was made to hold the 1955 Annual Meeting, October 23-26, at the New Ocean House, Swampscott, Mass.; the Teaching Institute, October 17-21. The 1956 Annual Meeting will be held November 11-14, Broadmoor Hotel, Colorado Springs, Colo.; the Teaching Institute to be held at the same place, November 5-9.

President Urges Reinsurance Fund

On January 18, President Eisenhower submitted to Congress a message urging the creation of a $25 million fund to establish a "limited federal reinsurance service to encourage private and nonprofit health insurance organizations to offer broader health protection to more families."

The President also recommended more aid to state and local public health services, extension of the program for the rehabilitation of the disabled, and strengthening of the Public Health Service research activities.

No additional details on the reinsurance service were available immediately, but there was speculation that the President might favor the graduation of fees by health plans carrying government insurance, so that the care would become available for lower income groups.

Diplomate Discontinued

The *Diplomate*, for 25 years the periodical of the National Board of Medical Examiners, was discontinued with the November-December 1953 issue, due to the growth of the Journal of MEDICAL EDUCATION and establishment of the *Student American Medical Association Journal*.

A monthly newsletter will succeed the *Diplomate*. It will be devoted to the national board's activities and examinations, and will contain information about medical licensure of interest to candidates for national board examinations.

Medical Education Fund

Business firms in the United States joined with practicing physicians to contribute nearly $2½ million in additional income in 1953 for the nation's 79 medical schools, according to a report of the National Fund for Medical Education.

During the past year, 994 corporations contributed to the fund, an increase of 193 firms over 1952. This indicates a growing awareness of the problems of medical education and of the responsibility of maintaining the health resources of the country by support of medical education on a national basis.

Armed Forces Institute

In August 1954, the Armed Forces Institute of Pathology, Washington, D. C., will move to its new building at the Walter Reed Army Medical Center, leaving the Armed Forces Medical Library in sole possession of the library-museum building.

Muscular Dystrophy Grants

Muscular Dystrophy Associations of America, Inc., has approved a grant of $28,102.75 to the University of Illinois College of Medicine for research into the cause and cure of muscular dystrophy.

The grant was made possible by the letter carrier's fund march in November, which raised more than $3,350,000 for the association. Research at Illinois will be under the direction of Dr. Ralph W. Gerard, professor of neurophysiology and director of research laboratories of the Neuropsychiatric Institute.

National Vitamin Fellowship

A three-year, $15,000 fellowship for postdoctorate training in the science of nutrition has been established by the National Vitamin Foundation. Known as the Russell M. Wilder fellowship, it was named for the recently retired director of the National Institute of Arthritis and Metabolic Diseases of the National Institutes of Health.

To be eligible for the fellowship, candidates must hold a doctor's degree in medicine or one of the basic sciences, biology, physiology, chemistry or biochemistry. Applications should be mailed to the National Vitamin Foundation, Inc., 15 E. 58th St., New York 22, before March 15, 1954.

The foundation also announced seven grants, amounting to $41,775, to five universities and two hospitals for research on vitamins and nutrition. Included are Johns Hopkins, Western Reserve, University of California and Vanderbilt.

World Heart Congress

The Second World Congress of Cardiology and the 27th Scientific Sessions of the American Heart Association will be held simultaneously September 12-17, in the National Guard Armory, Washington, D. C.

Round table conferences and the presentation of papers on such subjects as high blood pressure, congenital heart disease, hardening of the arteries and preventive aspects of heart disease will be featured on the program. Translation facilities for English, Spanish and French will be provided, since many persons attending will be from cardiac associations and affiliates all over the world.

The scientific sessions of the American Heart Association formerly have been held in conjunction with the association's annual meeting. This year, however, the annual meeting will be held April 1 and 2, at the Conrad Hilton Hotel, Chicago, and will be followed by a two-day program presented by the newly organized section on clinical cardiology.

Infantile Paralysis Fellowships

The National Foundation for Infantile Paralysis has announced that a number of fellowships will be available in 1954 for medical students who have completed at least two years of medical school, and who have eight weeks of consecutive free time to devote to extracurricular study.

Three types of fellowships, at $400 each,will be offered: research in basic sciences related to medicine, physical medicine and rehabilitation, public health and preventive medicine. For further information and application forms students should consult deans of their respective schools.

Proctology Academy

All physicians are invited to attend the sixth annual convention of the International Academy of Proctology, at the Palmer House, Chicago, April 8-11. The program will be highlighted by a motion picture seminar on proctologic surgery on April 11.

International Cancer Congress

The Sixth International Cancer Congress will be held in Sao Paulo, Brazil, on July 23-29, 1954. A large attendance of doctors, clinicians, investigators and public health officials is expected from all over the world. The program will cover four main subjects: biology and investigation,

pathology, radio and surgical therapy, and the social fight against cancer. The congress will be a part of the observance of the ninth centennial of the city of Sao Paulo.

Internal Medicine Congress

The Third International Congress of Internal Medicine will be held in Stockholm, Sweden, on September 15-18, under the auspices of the 40-nation International Society of Internal Medicine. The program includes two symposiums, one dealing with hypertension and the other with diseases of the connective tissue.

Hearing Research Institute

The Beltone Institute for Hearing Research has been established recently in Chicago to sponsor original studies and disseminate information on hearing problems.

Founded by the Beltone Hearing Aid Company, the institute will share information and will work with any organization, person or group that is interested in hearing loss.

Correction

The article on "The Relationship Between Chronological Age and Success in Medical School," published in the January issue of the Journal of MEDICAL EDUCATION, incorrectly listed the authors as Don P. Morris and Carmen Miller. These names should have appeared as Carmen Miller, member of the department of psychiatry, Southwestern Medical School, and Don P. Morris, professor of psychiatry and mental health at the University of Illinois.

College Briefs

Albany

Television as a teaching medium has been put into use, providing 160 students in the Huyck memorial auditorium with a better view of the operation than the second assistant surgeon in the operating room.

Permanent TV equipment has been installed in four operating rooms, and results have been so satisfactory that a member of the faculty successfully directed the removal of an aneurysm of the brain while viewing the dissection on the auditorium screen. The consent of the patient is always obtained for televised operations.

In the laboratory, televising of microscopy has enabled students in large lectures to observe minute experimentation on the screen.

Cincinnati

Dr. RICHARD W. VILTER, assistant director and associate professor of the department of medicine, has set up headquarters in Cairo, Egypt, to conduct a World Health Organization survey on the causes of anemia and nutritional diseases among the native population.

Cornell

The Rockefeller Foundation has made a seven-year grant of $150,000 for biochemical research under the direction of Dr. VINCENT DU VIGNEAUD, professor of biochemistry. The work, as in the past, will be particularly concerned with the sulphur-containing amino acids, polypeptides and hormones.

Duke

A $3,386,000, seven-floor addition to the hospital, providing a new outpatient clinic and more than 100 new beds, will be under construction this spring. Completion of the building is expected to take about two years. The addition will also include 10 new operating rooms, a central laboratory and more space for the medical record library.

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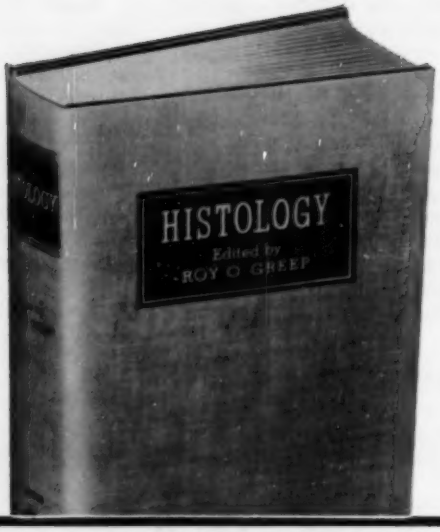

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Illinois

Dr. GRANVILLE A. BENNETT, formerly head of the department of pathology, has been appointed dean of the college of medicine. He will assume his new duties April 1, replacing Dr. ROGER A. HARVEY, who will return to his position as head of the department of radiology.

DR. BENNETT

Dr. Bennett has been with the college of medicine since 1944. He is presently chief editor of *Archives of Pathology*, consultant to the Armed Forces Institute of Pathology, and consultant in pathology to LaRabida Jackson Park Sanitarium, Chicago. He is also a member of the AAMC committee of the 1954 Teaching Institute on Pathology, Microbiology, Immunology and Genetics.

LLOYD MOREY has been appointed president of the university for a seven-month term, succeeding Dr. GEORGE C. STODDARD. Mr. Morey has been associated with the university since 1912, and served as comptroller since 1916. His term ends September 1, at which time he becomes eligible for retirement under university rules.

State U. of N. Y., Bellevue

A March of Dimes grant of $25,666 will enable the medical center to continue its reference center for information on appliances for the rehabilitation of handicapped persons.

Dr. JOHN HUGH MULHOLLAND, professor of surgery, has been appointed chairman of the surgery study section of the division of research grants, National Institutes of Health, Public Health Service.

Missouri

Construction is under way on an eight-story, 441-bed hospital, as part of a new medical center. The building is expected to be completed in August 1955, and will contain an outpatient department of 84 rooms, an emergency area, and classrooms, offices and laboratories for the clinical years of study.

Plans also are being completed for a medical sciences building which will adjoin the new hospital and be connected with it by corridors containing research laboratories. This building will contain departments for the six basic sciences, an air-conditioned auditorium, and a library.

Oregon

Dr. ROY L. SWANK, formerly of McGill University, has been named head of the neurology division, and Maj. DOUGLAS C. WENDT has been assigned to the medical school as professor of military science and tactics.

South Dakota

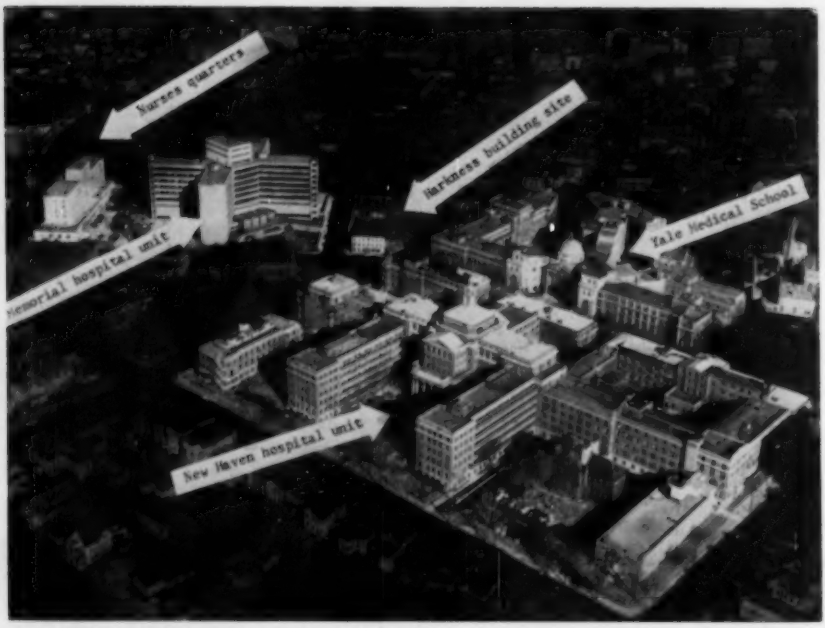
The new Andrew E. Lee medical and science building will be dedicated on March 7, 1954, at an all-day program. Dr. E. J. MCCORMICK, president of the AMA, will deliver the main address.

Southern California

Dr. ANDREW T. RASMUSSEN, who retired in 1952 from the University of Minnesota School of Medicine, has joined the faculty to teach a course in neuroanatomy. In addition to his teaching career, Dr. Rasmussen is the author of several texts on neuroanatomy, including "Outlines of Neuroanatomy," and "The Principal Nervous Pathways."

Stanford

A new medical school will be constructed on the Palo Alto campus within three to five years, according to the board of trustees. Affiliated facilities such as the university hospitals, the school of nursing, Lane library and the clinics will be moved from San Francisco to Palo Alto, but postgraduate programs will continue at San Francisco. University officials anticipate that the move will bring the medical school "into the closest possible physical and intellectual re-



AERIAL VIEW of the Yale-New Haven Medical Center, the new expansion of Yale School of Medicine and the Grace-New Haven Community Hospital. The growing physical plant of the center takes up three city blocks. A residential unit for medical students, to be called Edward S. Harkness Memorial Hall, is expected to be completed by September 1955 (see arrow top center). The Grace-New Haven nurses' building and the memorial hospital unit (see arrows top left) were both completed in 1953.

lationship with the whole university."

George Washington

Construction of an addition to the hospital will begin early this spring. The new building will cost approximately $200,000 and will increase from 500 to 1000 the number of patients each month who can be treated with deep therapy x-ray.

The building also will provide facilities to care for the anticipated increase in cancer treatments arising from the expanded diagnostic facilities of the cancer clinic when it moves to its new quarters across from the hospital on Washington Circle.

Yale

The school of medicine and the Grace-New Haven Community Hospital, affiliated since 1926, recently announced plans for a new Yale-New Haven Medical Center.

HIRAM SIBLEY, executive director of the Connecticut Hospital Association since 1948, has been named director of program development.

Both the university and hospital will retain their independent corporate status, but will begin a joint development program for the care of patients and for medical research and education.

A new residential unit is also being planned.

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Audiovisual News

Educational TV Stations

Four educational TV stations are now on the air. A total of 45 applications for educational TV stations have been filed with the Federal Communications Commission and 29 construction permits have been granted to date. Those stations now telecasting are located at Ames, Iowa; Houston, Texas; Los Angeles and East Lansing, Mich.

Polyester Film Base

DuPont is building a plant for the manufacture of a new synthetic base for film. The new base is related to "Dacron" and "Mylar." The advantages claimed for the polyester film are greater strength, longer wear, greater resistant qualities, higher clarity and reduced thickness.

Electronic Photography

On December 1, the Radio Corporation of America placed a visual message on neither celluloid or polyester but on a strip of magnetically coated plastic tape half an inch wide. When it was played or shown back there was comparatively excellent definition. Magnetic tape requires no chemical processing hence it can be played back immediately.

To make movies of anything other than a telecast at present requires the equivalent of television studio equipment to pick up and record images on magnetic tape, but the development of cheaper equipment may mean the ultimate use of magnetic tape for all motion pictures.

TV at Medical Meetings

Color television at 13 medical assemblies during 1954 has been announced by the Smith, Kline & French Laboratories. Operations and clinics will be televised for closed-circuit "large screen" viewing at the following meetings:

Chicago Medical Society, Chicago, March 2-5; *Michigan Clinical Institute*, Detroit, March 10-12; *American College of Physicians*, Chicago, April 5-9; *California Medical Association*, Los Angeles, May 10-13; *Canadian Medical Association*, Vancouver, June 14-16; *American Medical Association*, San Francisco, June 21-25; *International College of Ophthalmology*, New York, September 14-19; *American Academy of Ophthalmology and Otolaryngology*, New York, September 19-25; *Kansas City Southwest Clinical Society*, Kansas City, Mo., October 5-7; *American College of Surgeons*, Atlantic City, November 14-19; *American Medical Association*, Miami, November 30-December 3.

Summaries of Film Reviews

First Aid in Major Wounds, Fractures and Burns

38 min., sd., b&w., 16 mm., 1950.

A class of Army trainees sees a film on rescue of the wounded under battle conditions. On the true battlefield a soldier's leg arterial injury is handled by a comrade who covers the wound, places a limb tourniquet, pressure packs the wound to stop bleeding, splints the leg as a suspected fracture and then seeks to prevent shock by appropriate steps. A lone soldier wounded in battle seeks to give himself first aid. In class soldiers are shown the principles and practices of splinting of extremities. On the battlefield first aid for head wound and jaw wound, back injury and clavicle fracture are illustrated. In classroom and battlefield situations, rib and pelvis fractures are covered. An eviscerating abdominal wound and a bubbling chest wound are given field first aid. A leg burn victim is managed.

Class demonstrations are juxtaposed

with simulated battlefield traumata in an orientational film which teaches first aid principles and some broad skills. Superficiality is inevitable in so wide a coverage of subject matter. The methods shown represent accepted military standards, although the use of tourniquets is a moot issue, and improvised traction splints should perhaps also be included. Technical cinematographic execution of the film's complicated structure is on the whole competent and professional.

As an introduction to or review of this segment of first aid, the military personnel and settings do not obstruct the film's potential use with civil defense groups. The film is a meaningful visualization of many types of trauma and their initial handling, and can be fruitfully integrated into regular first aid courses.—*A.N., with MAVI Panel, 1951.*

Audience: Military and civilian classes in first aid.

Production Data: Sponsor - Producer: U. S. Army.
Distribution: Commanding General, Attention: Signal Officer, Headquarters, First to Sixth Army (according to location of user) or to director, Armed Forces Institute of Pathology, 7th and Independence Avenue S.W., Washington 25, D.C., **Loan** to members of medical profession and allied scientific groups; Use Code No. TF8-1571.

And a Voice Shall be Heard

22 min., sd., b&w., 16 mm., 1951.

In the city of Syracuse, N. Y., modern communication is shown: telephone, roads, railroads, airport, radio, newspaper, television. The normal uses of two-way radio are illustrated in an auto accident and a fire. A central control system of two-way radio is demonstrated for citywide emergency. A simulated atomic attack occurs. The control center acts, supervising local and regional personnel in the fighting of fire, the care of the injured, the opening of roads and the reestablishment of ground communication. Preparedness is emphasized as the basis for security.

This March of Time short was filmed during a simulated atomic attack, with the City of Syracuse as stage and its civil defense volunteer personnel as actors. Its message concerns the critical importance of independently powered central two-way radio communication in time of disaster, and is strongly motivational as well as orientational in its observations of civil defense functions. The production is of acceptable caliber for theatrical shorts. It creates authentic stimulation of civil defense preparedness, while evoking confidence that effective planning will mitigate panic, destruction, and the effects of a real atomic blast emergency.

This film adequately presents careful planning and execution of central two-way radio communication by civilian volunteers in time of atomic disaster for all pertinent audiences requiring information or motivation.—*D.S.R. and G.V.B., with MEND Panel, January 1954.*

Audience: Any personnel concerned with civil defense, lay public.

Production Data: Sponsor: General Electric Co.; **Cinematographer:** Nicholas Cavaliere; **Sound:** Kenneth Hawk; **Editor:** Sally Voorhis.
Distribution: General Electric Company Regional Film Libraries (17), **Loan.**

Survival under Atomic Attack

10 min., sd., b&w., 16 mm., 1951.

An introduction vignettes the Hiroshima bombing with its human and material wreckage, and emphasizes that flight after an A-blast would be disastrous. Factories, homes and offices are all shown to be posts of duty. In preparation for an atomic emergency, the citizen is admonished to look over his home, his cellar and interior hallways as shelters. Apartment houses, shelters and raid practice are shown. Fireproof housekeeping and preparation for emergency are advocated. Action during an atomic alert or blast is shown, at home and on the street. Decontamination is demonstrated.

This superficial orientational film covers the essential points of personal protection during an atomic bomb assault. It evokes in good taste both the alarm of threat of atomic attack and the reasonable confidence gained from preparedness. Production skills are competent if not exceptional by commercial standards.

For all civil defense audiences requiring orientation and motivation of the individual, this film will provide both stimulus and basic facts which can be elaborated upon by use of booklets, discussion, et al.—*D.S.R. and G.V.B., with MEND Panel, January 1954.*

Audience: Civil defense groups, lay public.

Production Data: Producer: Castle Films, Inc., New York, N. Y.; **Scientific advice**

and cooperation: U. S. Civil Defense Administration, Washington, D.C.
Distribution: United World Films, Inc., 1445 Park Ave., New York 29, N. Y., **Sale:** $19.75, and **Loan:** State Film Libraries.

Earthquake in Ecuador

18 min., sd., b&w., 16 mm., 1951.

It was in mountainous Ecuador at harvest time, August 5, 1949, when for eight minutes the Andes quaked in an area centered about Pellalao. Throughout 300 square miles 6,000 died, 7,000 homes crumbled and great destruction occurred. Red Cross aid arrives. The United Nations' WHO acts to supply food, supplies and expert services. In the tent cities of the disaster area rapid and thorough action is taken to curb potential air-, water-, food- and insect-borne diseases. Potable water, food and milk are delivered to the refugees. UN agricultural experts act to recover the grain, fruit and stock losses; FAO plans and begins a new irrigation system; but true agricultural rehabilitation will require years. Home rebuilding begins, and arduous recovery is set afoot.

The film presents most graphically the world reaction to a limited if intense catastrophe, and indicates the mode of teamwork among nations and expert professions in disaster first aid and in long-term rehabilitation of a disaster area. Although the film underlines several functions of the United Nations in the coordination of international good neighborliness, emphasis is put upon the development of relative self-sufficiency of independent nations such as little Ecuador. This is a straightforward factual visual report of a natural disaster of the first magnitude, replete with the inherent drama of individual and mass tragedy. Photographed with skill and imagination, the film is also edited and narrated with precision and restraint.

All persons will be moved by this well-produced film of humanity overwhelmed, and humanity rallying to regain ground lost to nature. In this upheaval of nature, first aid and civil defense groups will find lessons identical with man-made disaster, lessons revealing the roles of medical and public health personnel during both crisis and rehabilitation periods.—*A.N., with MAVI Panel, 1951.*

Audience: Lay public, first aid and civil defense groups.

Production Data: Sponsor and Producer: United Nations Films and Information Division; **Director:** Leo Hurwitz; **Cameraman:** Richard Leacock.
Distribution: Association Films, 347 Madison Ave., New York 17, N. Y., **Loan.**

The Eternal Fight

18 min., sd., b&w, 16 mm., 1950.

The eternal fight of men against the plagues is epitomized in medieval illustrations. Loewenhoek, Spallanzani, Jenner, Pasteur, Koch and Reed have spearheaded this fight. The 19th century industrial revolution's changes in human life and modes of communication have created great new potentials for epidemic disease, to combat which quarantine methods have developed. A modern sailor and his wife personalize the threat of international transmission of disease. Not knowing that she has typhus, he departs on his ship. With diagnosis of her disease, authorities spring into action, halting his ship at sea and returning him to his home port, immunizing his shipmates and eradicating shipboard rats. Quarantine is proved to be an obsolete concept; disease must be eradicated in their endemic foci. The World Health Organization's activities which link public health services everywhere are dramatized as the campaign which will achieve the conquest of epidemic disease on the entire planet.

As a dramatized documentary film concerning the control or containment of infectious diseases, the film centers its message upon the concepts that disease anywhere is disease everywhere, potentially, and that quarantine is an untenable concept in this age. It is unfortunate that, in the example chosen to give realism to the film essay, epidemic and endemic typhus have been confused, and both with bubonic plague; it is also unfortunate that not a few scientific inaccuracies mar the narration. As a film production, dramatic devices are used without wise restraint; in addition, not only is continuity maintained principally by the narration but also a sea of artificial climaxes presented at hectic pace blunts the film's really important message on global medicine.

Despite its defects, the film may have some value as a lesson in preventive medicine and in the functions of the WHO. A carefully prepared introduction by an instructor can perhaps dull the impact of the inaccuracies and productional misjudgments.—*C.S., with MAVI Panel, 1951.*

Audience: Lay public, science students with proper direction.

Production Data: Sponsor: United Na-

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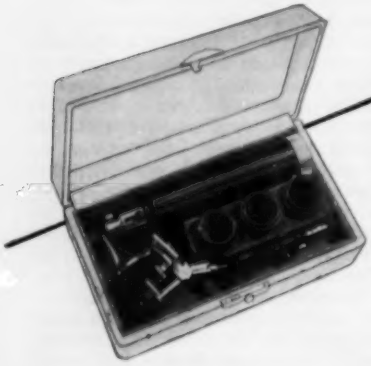

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Hand Diagnostic INSTRUMENTS

tions Film and Visual Information Division; **Producer-Director:** Victor Vicas, Madeleine Carroll Films, N. Y.; **Production Supervisor and Editor:** Michael Alexander; **Script Research:** Myria Loewy.
Distribution: Association Films, 347 Madison Ave., New York 17, N. Y., **Loan.**

Artificial Respiration—Approved Methods and Techniques

11 min., sd., b&w., 16 mm., 1952.

After an introduction showing the range of circumstances requiring artificial respiration, three young men on a sunny beach demonstrate the Holger-Nielsen back pressure arm lift method. Preparation of the victim, proper placement of the rescuer's hands and feet, the method and its rhythm are shown during use. The use of a simple oxygen respirator with nasal catheter is demonstrated. Change of operators and steps to take with the beginnings of victim recovery are shown. The back pressure hip lift method is similarly demonstrated: positioning of the victim and rescuer, the method of exerting and releasing pressure upon the thorax followed by raising of the hips, the rhythm of operation, change of operators during performance, and use of auxiliary oxygen.

The film contrasts simple demonstrations of the two officially accepted methods of artificial respiration, focussing entirely on motions rather than upon rationale or explanation of the procedures. The use of a nasal catheter, oxygen and CO_2, stretcher, liquid stimulant, the question of head position and tongue, complications of injury and shock are all raised as issues and require later elaborations. The cinematography is superficial and visually nonanalytical, and only the general familiarity and fundamental simplicity of the methods permit a reasonable understanding of what is on the screen.

The film effectively performs its task of demonstrating two simple life-saving procedures despite its many small failings. Students of first aid will gain confidence for practice sessions when the film is used for preliminary orientation. For students with scientific knowledge, a competent discussion leader-instructor will be required to answer the many items suggested but not explained.—*D.S.R. and G.V.B., with MEND Panel, January 1954.*

Audience: Classes in first aid.

Production Data: Sponsor and Producer: Public Information Division for Medical Division, U. S. Coast Guard; **Editor:** James A. Love.
Distribution: U. S. Coast Guard Headquarters, Chief, Public Information Division, Washington 25, D. C., **Loan.**

Artificial Respiration—The Back Pressure Arm Lift Method

7 min., sd., b&w., 16 mm., 1952.

On a gym floor two youths demonstrate artificial respiration: first, placement of head and arms; second, positioning of the operator; third, the beginning of rhythmic back pressure over the scapulae, release, rock back and lift of the arms above the elbows. For emphasis, the position of the operator is frozen at the moment of vertical pressure, and the operator's changing of knees is demonstrated. A summary is spoken from the sound track during repetitions of the method.

This brief and simple film shows the most widely accepted modern method of artificial respiration, performed in good style by two demonstrators. There is no adequate attempt to explain or interpret the method as seen. As a film it is visually poor in its analysis of movements and rationale alike; much of the information comes from the sound track; but only the obvious is transmitted effectively.

The essential simplicity of the method and the film are a saving grace; first aid class audiences will gain enough to begin useful practice sessions. A competent instructor can discuss and make clear the many pertinent facts which the potential rescuer must know if he is to apply intelligently this simple method in difficult situations.—*D.S.R. and G.V.B., with MEND Panel, January 1954.*

Audience: Classes in first aid.

Production Data: Producer: Seminar Films, Inc.; **Scientific Advice:** Peter Karpovich and Creighton Hale, Springfield (Mass.) College of Physical Education.
Distribution: Seminar Films, Inc., 347 Madison Ave., New York 17, N. Y., **Rental: $4.**

"If this book advances the field, it is because it shows that today the follow-up is to surgical pathology what the autopsy was to the last generation."

Journal of Medical Education,
January, 1954

Ackerman's

SURGICAL PATHOLOGY

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

The reviewer in the January issue of this journal was quick to see the purpose of Ackerman's latest book—and that is comforting to us, for many times the opinion of reviewers of the literature varies. They vary for reasons that are inexplicable.

We published the book because we knew that Ackerman wrote it to integrate the clinical aspects of disease with the gross and microscopic pathology. His entire experience is in surgical pathology and that strengthens the book.

The last sentence of this journal's review is quoted above. Here is another excerpt from that review:

"The book is gratifying in its exposition of common serious pitfalls. Papillary hidradenoma of the vulvo-rectal region is cited as being mistaken for adenocarcinoma; plantar fibromotosis and nodular subepidermal fibrosis may be called fibrosarcoma. A sentence might warn of mistaking myoepithelial sweat gland adenomas of extremities for synovioma or ulcerating adenocystic salivary gland carcinomas for basal cell epithelioma. Presumably such blunders are made repeatedly because the lesions are uncommon in even a rich autopsy experience. The author strives to correct this with copious illustrations, wonderfully well done and with a nice balance between gross and microscopic features. For this reason the book will be a very acceptable text for medical students and residents as well as for practicing pathologists and surgeons."

Would you like to see a copy for consideration in your classes?

By LAUREN V. ACKERMAN, M.D., Professor of Surgical Pathology and Pathology, Washington University, School of Medicine; Surgical Pathologist, Barnes Hospital and Affiliated Hospitals, St. Louis; Consultant to the Ellis Fischel State Cancer Hospital, Columbia, Mo.; Consultant to the Armed Forces Institute of Pathology.

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Book Reviews

From Fish to Philosopher

Homer W. Smith, professor of physiology, New York University College of Medicine. Little, Brown and Company, Boston, 1953. 264 pp. with index, $4.

This is a very interesting book. Homer W. Smith is a scientist who needs no introduction to students of biology. His ability as a creative and stimulating nonfiction writer, clearly demonstrated in this book, may not be so generally known.

While it is commonly accepted that man is superior to other animal forms (at least from man's point of view), the questions of why, and especially how, are rarely asked or answered.

Dr. Smith begins his story with the evolution of the earth, linking the gradual development and subsequent modification of animal life to the various geological upheavals which have occurred. These drove the fish from the seas to fresh waters, and thence to land.

The kidney played an essential role in this, since it functions to maintain the constancy of blood plasma. This "constancy" enables cells to receive nutrient materials, and at the same time discharge the waste products resulting from the utilization of these nutrient materials.

The early provertebrate invading the fresh waters protected itself against a rapid diffusion of these waters by a heavy armor plate. Later, it developed a more adequate kidney which permitted the sloughing of armor resulting in a form far more capable of obtaining food and reproduction. This paved the way for the development of a centralized nervous system.

An extensive elaboration of the nervous system leading eventually to the phenomenon of consciousness might not have been possible in the absence of an efficient kidney. This organ allows the cells of the body to function in security by isolating them from the vicissitudes of the external environment.

The ability of man to take stock of himself, plan for the future, and act on this basis, depends in no small part on his kidney. Unlike many animals such as the frog whose body temperature changes with every fluctuation in the external environment, man remains quick, active and alert through an extreme range of environmental changes.

In short, man has been able to achieve what has been denied all others; he can make a choice and understand his reasons for making a choice. "And knowing how and why he says 'I will', he comes into his own as a philosopher."

This book will appeal to both the layman and the biologist. It constitutes an excellent outside reference for introductory courses in physiology since it gives the student a striking picture of the interdependence of various organ systems. The reviewer will be keenly disappointed if the book fails to reach a large audience.

Design For Decision

Irwin D. J. Bross, statistical consultant, Cornell University Medical College. The Macmillan Company, New York, 1953. 266 pp. $4.25.

There have been many developments during the last several years in the application of statistics to the problem of making decisions. Most publications concerned with these developments are highly technical; this book is a nontechnical overview. Broken down into common language, good decisions can be made more often if one first finds out the chances of occurrence of various outcomes and evaluates the desirability of these outcomes. How to go about doing this is discussed under the topics of prediction, probability, values, data, models, sampling, measurement, etc. Bases on which to make decisions are presented in terms of constructing and operating a "decision-maker."

The layman in statistics will find this a very readable and informative introduction to the field. In addition, he will find a suggested bibliography if he wishes to pursue the subject. For the individual who is already familiar with

statistical concepts, this book should help to integrate his thinking about the usefulness of the concepts and about some of the complexities involved in real life application such as value systems.

Diseases of Women, 9th edition

By 10 teachers, under the direction of Frederick W. Roques, M.D., F.R.C.S., F. R. C.O.G. Edited by **Frederick W. Roques, John Beattie, Joseph Wrigley.** Edward Arnold & Company, London, 1953. American distributors: Williams & Wilkins Co., Baltimore, 480 pp. with index, $6.50.

The current edition of "Diseases of Women" brings up to date a popular British text which was first published in 1919. Once again it aims at a rather complete coverage of all gynecology within a very brief space. While such a goal is not impossible, it does mean that many topics must of necessity be omitted or treated lightly.

Thus, for example, few gynecologists will be completely satisfied with the coverage accorded pre- and postoperative care of the surgical patient. Few students will emerge from the section on the biologic tests for pregnancy with a very clear picture of their technical nature or place in everyday practice. Actually, in several areas, the average student will feel the need for supplementary reading.

On the other hand, the authors have succeeded in presenting an inexpensive, highly readable text which surveys a broad area quickly and conveniently. The increasing size and expense of undergraduate medical texts in the past decade has concerned not a few educators. The resident group in gynecology will not find here an exhaustive enough treatment of the topics considered to satisfy them; but a more complete presentation, in a book three times as large and three times as expensive, is in many cases much more than the average student taking his first gynecology course needs. Lesser surveys of this general type undoubtedly have a place as student texts.

It should be noted in this respect, however, that the book is totally devoid of bibliography. Neither after individual chapters nor at the end of the book can the student interested in extending his reading find guidance in the literature. It would be hoped that—without significantly enlarging the book—each author could conclude his particular chapter with a few current references which would give the reader a start.

Finally, as a matter of interest, the individual authors are not identified as to their individual contributions. The reviewer has no very fixed opinion on this matter, but raises the question—with such a distinguished group of contributors—as to whether it might not increase reader interest if one knew which authority was responsible for which section. It is perhaps, of little matter; all of them have done a good, albeit brief, job.

Allan C. Barnes, *Western Reserve*

Handbook of Practical Bacteriology, 9th edition

T. J. Mackie, M.D., LL.D., D.P.H., professor of bacteriology, University of Edinburgh; **J. E. McCartney,** M.D., D. Sc., medical bacteriologist, Institute of Medical and Veterinary Science, Adelaide, South Australia. E. & S. Livingstone Ltd., Edinburgh and London, 1953. American distributors: Williams & Wilkins Co., Baltimore. 677 pp. with index, $5.50.

This book consists of 677 pages. It is divided into three parts. Part one deals with the biology of micro-organisms and the relation of immunity to applied microbiology.

In part two the authors discuss microbiological techniques. They include the use of the microscope, staining methods, sterilization, preparation and use of culture media, animal inoculation and care, applied immunological and serological methods, examination of air, water, mild sensitivity of bacteria to sulphonamide compounds and antibiotics.

Part three includes routine laboratory procedures for the identification of pathogenic and commensal micro-organisms in the field of bacteriology, mycology, virology and parasitology.

The following groups of micro-organisms are included: gram-positive andnegative cocci, the Corynebacteria, the Mycobacteria, the Anthrax bacillus and related organisms, Glanders bacillus, the Coliform, Salmonella group, the Shigella group, the Vibrie comma and related organisms, Pasteurella pestis and tularensis, Brucella and haemophilic groups, the Clostridia, the Actinomycetes, pathogenic and commensal spirochaetes, Rickettsia group and Bartonella, the viruses, pathogenic fungi, malaria Plasmodia, Babesiae, Trypanosomes, Leishmaniae and Toxoplasma.

It seems as if the use of this reference book in this country would be greatly enhanced if such laboratory methods as the following were not omitted: Sellers' method for staining Negri bodies, intracerebral injection of mice in suspected rabies which show no Negri bodies.

Kahn is the only floculation test for syphilis described. Others that are widely used are Kline, Massini, Ninten and Eagles. The V.D.R.L. Kolmer modification of the Wasserman has also been omitted.

Culture media such as Brewer's anaerobic medium with special dish should not be omitted, as well as Desoxycholate citrate medium Ph 8.4 and Read's modification of Wilson-Blair bismuth sulfite Ph 9.2, which have practically replaced the old Dieudonne medium, which is difficult to prepare.

Dehydrated culture media are said to be satisfactory for most purposes but not equal to freshly made media from fresh meat such as digest broth and agar. If this is true only a small amount of space should be needed for the composition and preparation of media. Companies (such as Difco and B. B. L.) supplying media have manuals which describe the composition and preparation of most of the media in use. Only a small portion of the 80 pages on culture media would be needed to include many of the routine laboratory procedures that are commonly used here.

The chapter on microscopy is very good. The directions for the laboratory procedures are written in simple and concise language that should be easily followed by all laboratory technologists in the field of microbiology. This book should be helpful to laboratory workers. The authors are to be commended.

The Psychology of Personality

Bernard Notcutt. Philosophical Library, Inc., New York, 1953. 255 pp., $4.75.

This is a well-written and highly interesting presentation of a broad, fairly complex and rather controversial field of psychology.

The first part of the book deals, for the most part, with a discussion of three main types of personality theories. These include trait theories wherein accounts of people are given in terms of ascribable characteristics or trait names, and which treat the individual apart from his environment; environmental theories which stress either the biological or sociological determinants of behavior and interaction theories which emphasize the importance of individual and environment particularly insofar as they interact with one another. The author shows preference for the latter type of theory, although he does not entirely reject the others.

The second part of the book is devoted largely to a review of techniques and methods for studying personality. These include rating scales, projective personality tests, psychoanalytic methods, experimental real life situations and group tests of interaction. In a chapter entitled "Men in Groups," the author reviews some group psychotherapy techniques and sociometric methods of analyzing personality. This is a rather unusual chapter for a personality text, but it is, to this reviewer, an appropriate addition.

Throughout the book there is an appeal for greater acceptance of intuitive and indirect methods of personality validation in contrast to the more strictly experimental—physiological and objective methods. The value of the latter, however, is not at all denied.

This book should be especially valuable to those who, with relatively meager background in this area, desire a brief yet accurate and comprehensive study of personality.

Arthur H. Davison, *Milwaukee County Hospital for Mental Diseases*

The Symptoms and Treatment of Acute Poisoning

G. H. W. Lucas, professor of pharmacology, University of Toronto. The Macmillan Company, New York, 1953. 308 pp. with index. $4.

The purpose of this book is to provide up-to-date information on the symptoms and treatment of acute poisoning for most of the drugs met with in medical practice. It appears to do so. There are short chapters on general considerations of diagnosis and treatment including first aid, supplies of useful drugs and apparatus, emetics and gastric lavage, collection and preservation of samples for the analyst and poisoning in children.

The greatest part of the book (195 pp.) is devoted to cases of poisoning, in which the substances are listed alphabetically. For each, the circumstances under which poisoning arises, the fatal dose when known, the symptoms and the treatment are given.

There is also a table of fatal doses for about 100 substances, for which are given (1) the smallest recorded fatal dose, (2) a range of somewhat larger doses which have been known to cause death in otherwise healthy individuals, (3) doses causing death in children, (4) large quantities from which recovery was recorded. Unsatisfactory aspects of such data are mentioned. There is a 29

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pp. index which includes many registered trade names of drugs as well as common names.

Peter K. Knoefel, *Louisville*

Physiology of the Eye, 2nd edition

Francis Heed Adler, M.A., M.D., F.A.C.S. The C. V. Mosby Company, St. Louis, 1953. 720 pp., with illustrations, references, index. $13.

The author, who is the Norris and de Schweinitz professor of opthalmology, University of Pennsylvania School of Medicine, has contributed an excellent and considerably enlarged second edition to his well-known textbook on physiology of the eye, first published in 1950.

This edition continues to emphasize the clinical application of physiologic material and contains a considerable amount of new scientific material recently available to us, in view of the marked increase in the number of studies and in the greater interest in ocular physiology during the past few years.

The popularity of the first edition reflected the soundness of Adler's writings and the great extent of his scientific scholarship. The second edition will undoubtedly increase the popularity, for his contribution is a most accurate, valuable and indispensable tool for students and practitioners not only in ophthalmology, but also in general physiology.

Derrick Vail, *Northwestern*

On Aphasia

Sigmund Freud. International University Press, Inc., New York, 1953. 105 pp., $3.

This small monograph was first published in 1891, and until the present translation by Dr. E. Stengel of London, was only available in German. Although dealing with the neurological aspects of aphasia, Freud already alludes to many of his later psychoanalytic formulations in this work.

Noteworthy is his criticism of the then well established theory of the "localization doctrine of aphasia," and his alternative functional explanation of cerebral and mental activity. Ernest Jones, in his biography of Freud, states that this "is the first authentic glimpse we get of Freud of later years. It has the close reasoning, the lucidity, the persuasive and thought-provoking argumentation, the candid discussion of objections, and the remarkable capacity of ordering his material that became so characteristic of his writing."

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historically to the neurologist and psychiatrist, but many of Freud's dynamic and original concepts are quite appropriate to current problems of cerebral activity.

It is not the purpose of this review to deal specifically with points emphasized in this book. However, it is important to underscore Freud's great appreciation of Hughlings Jackson. Especially important is his application of Jackson's law of dissolution to his later writings on regression. This has been one of the cornerstones of the genetic orientation in psychoanalysis. Freud's idea that disturbances of function can be caused by cerebral lesions as well as psychological stress has been most important in our understanding of psychopathology.

Freud's preference of dynamic concepts rather than static descriptions is conspicuous throughout and already foretells his approach to psychiatric disorders. The ideas on aphasia expressed here are as fresh today as they were 62 years ago. Because of its historical importance and its detailed treatment of aphasias, this book is not recommended for medical students; however, it should be required reading for all psychiatrists, neurologists and medical educators interested in dynamic medicine.

George H. Pollock, *Illinois*

Books and Pamphlets Received

(As space permits, those with the greatest interest to our readers will be reviewed)

Basic Pathology and Morbid Histology

D. B. Cater, M. A., M.D. (Cantab.), F. R. C. S. (Eng.), University Demonstrator in Pathology, University of Cambridge. The Williams & Wilkins Co., Baltimore, 1953. 220 pp. with index. $8.50

Clinical Endocrinology

Karl E. Paschkis, M. D.; **Abraham E. Rakoff,** M. D.; and **Abraham Cantarow,** M. D., Jefferson Medical College. Paul B. Hoeber, Inc., Medical Book Department of Harper Bros., 1954. 768 pp. $16.

Dermatologic Medications

Marguerite R. Lerner, M. D., and **Aaron B. Lerner,** M. D., Ph.D. The Year Book Publishers, Inc., Chicago, 1954. 170 pp. with index. $3.50.

Pharmacology

J. H. Gaddum, Sc.D., F.R.S., M.R.C.S., L.R.C.P., professor of pharmacology, University of Edinburgh Oxford University Press, 1953. 516 pp. with index. $8.

The Physiology of Man

L. L. Langley, M. A., Ph.D., and **E. Cheraskin,** M. D., D.M.D. McGraw-Hill Book Co., New York, 1954. 575 pp. with index. $5.50.

The Chest

Leo G. Rigler, M. D. The Year Book Publishers, Inc., Chicago, 1954. $8.

An Introduction to Electronics for Physiological Workers

I. C. Whitfield, B.Sc., Ph.D. Macmillan & Co., Ltd., London, 1953. $3.50

Global Epidemiology

James S. Simmons, B. S., M.D., Ph.D.; **Tom F. Whayne,** A. B., M.D., M.P.H.; **Gaylord W. Anderson,** A. B., M.D., and **Harold Maclachlan Horack,** B.S., M.D. J. B. Lippincott Co., Philadelphia, 1954. $12.

Pharmacology and Therapeutics

Arthur Grollman, Ph.D., M.D., F. A. C. P. Lea & Febiger, Philadelphia, 1954. $10.

Surgical Pathology, 2nd edition

Peter A. Herbut, M. D. Lea & Febiger, Philadelphia, 1954. 913 illustrations. $14.

Educating Physical Therapists to Meet the Challenge of the Future

F. A. Hellebrandt, M.D., professor and head of the department of physical medicine, University of Illinois. Stipes Publishing Co., Champaign, 1953. 129 pp.

Understanding the Japanese Mind

James Clark Moloney, M. D. Philosophical Library, New York, 1954. 218 pp. $3.50.

The Personnel Exchange

Faculty Vacancies

• TEACHING FELLOWSHIP IN ANESTHESIOLOGY: Available for 1 year to physician eligible for New York State Licensure, with at least 2 years approved residency training. Clinical instruction of medical students in operating room of Albany Hospital major responsibility. Interest in clinical research important but not mandatory. Annual stipend $6,000. Contact J. Gerard Converse, M.D., Professor of Anesthesiology, Albany Medical College.

• Roswell Park Memorial Institute (New York State Institute for Malignant Diseases) is completing an expansion program with the addition of a 516 bed hospital unit and generous research facilties. An active teaching program is carried on in association with the University of Buffalo Medical School. Staff positions in the departments of medicine, surgery, pathology and the basic sciences are open to individuals with investigative and teaching interests in the general field of malignancy. Reply to: George E. Moore, director, Roswell Park Memorial Institute, Buffalo 3, New York.

• PROFESSOR OF PREVENTIVE MEDICINE. Applications are invited for the position of professor of preventive medicine in the faculty of medicine, University of Ottawa, Canada. Requirements: M.D. with specialization in preventive medicine and preferably with teaching experience. Write full details to: V-13 Journal of MEDICAL EDUCATION.

• The University of British Columbia Faculty of Medicine requires a TEACHING FELLOW in PSYCHIATRY for one year or 18 months beginning January 1, 1954. Stipend, $2,400 per annum. Duties will be performed in psychiatric unit of Vancouver General Hospital. Address inquiries to: Dr. George A. Davidson, Dept. of Psychiatry, Faculty of Medicine, University of British Columbia, Vancouver, Canada.

• BIOCHEMIST—NUTRITIONIST: Teaching and research position in department of biochemistry, southern university. Salary and rank are open and depend upon educational background, teaching experience and research activities. Reply should include personal history, complete bibliography and photo. Address: V-14.

• Physiologist: Combined department of physiology and pharmacology. Rank and salary dependent upon qualifications. Write Dr. F. E. Kelsey, Chairman, Department of Physiology and Pharmacology, University of South Dakota Medical School, Vermillion, South Dakota.

• INSTRUCTOR OR ASSISTANT PROFESSOR: Department of physiology of a medical school has full-time permanent position available. Duties involve instruction of first and second year medical students and a small group of student nurses. Individual selected must be qualified to carry out an independent program of research. Preference will be given to candidates having experience and interest in research in circulatory or respiratory physiology; others will be given serious consderation. Address: V-15.

• SURGEON: Position available full-time on medical faculty. Excellent clinical material and teaching and research facilities. Address: V-16.

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• UROLOGIST and SURGEON: Age 49, active research worker. Experienced teacher in physiology and urology desires teaching in both subjects and research position in medical school. 42 published papers and lectures and one book. Position should be permanent. East or West coast preferred. Available immediately. Address: A-73.

• ANATOMIST: Man. South American. Age 44, M.D. University of Paris. Languages: Spanish, French and English. Teaching experience in gross anatomy, 15 years. Head and professor of the department of anatomy since 1951. Publications. Educational awards. Seeking full-time position as professor or assistant professor of gross anatomy in any school but prefers a New England or West Coast medical school. Available: March 1, 1954. Address: A-74.

• MEDICAL and GENERAL ENTOMOLOGIST: Ph.D., 1938. Man, age 42. Family. Associate professor in leading medical school with 18 years teaching and laboratory research experience, including fundamental and disease-transmission studies. Publications. Organizations. Editing. Desires change of location with permanent academic (undergraduate or graduate level). Research or other suitable position. Address: A-76.

• RESEARCHER: Man. Age 35. Family. Research associate and assistant. Interested in university offering research opportunity connected with teaching pharmacology. Experience largely in research with some teaching.

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1. Russek, H. I.; Urbach, K. F.; Doerner, A. A., and Zohman, B. L.: J.A.M.A. *153*:207 (Sept. 19) 1953.
2. Humphreys, P., *et al.*: Angiology *3*:1 (Feb.) 1952.
3. Plotz, M.: New York State J. Med. *52*:2012 (Aug. 15) 1952.

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• SURGEON: 35. Seven years surgical training and teaching at the University of Goettingen, Germany. Experience in research and publications both in Europe and USA. Anticipating completion of American Board of Surgery requirements in June 1954. Wishes to resume academic career. Special interest in surgical physiology. Address: A-78.

• PHYSIOLOGIST or BIO-PHYSICIST: Man, 31, married. M.S., Ph.D. Desires academic position with freedom of research, or research position in field of interest. Active researcher, many publications, special experience in radioactive isotope methods, bone mineral turnover, circulatory dynamics, burn-shock. One and one-half years predoctoral teaching experience. Broad education in biology and various fields of physiology. Address: A-79.

• BIOCHEMIST: Ph.D. 36. Associate professor in large medical college with distinguished record in research on peptides, amino acids, hormones and antibiotics. Has taught biochemistry in two medical colleges; elementary and advanced courses in university. Desires position in a medical college, preferably with opportunity to direct graduate students in biochemistry, in research institute or in university. Address: A-80.

• M.D., DR. P. H. interested in teaching in medical or public health school. Fifteen years' experience includes general public health administration, industrial hygiene, epidemiology, immunology and basic and applied research; also some undergraduate and postgraduate teaching. Publications. Excellent references. Available on short notice. Address: A-81.

• PHYSIOLOGIST: Teaching position in a medical school starting in the fall of 1954. Has had five years in pediatrics, will have had two years in neurophysiological research. Age 28. Address: Anton N. Lethin Jr., dept. of physiology, Yale University School of Medicine, 333 Cedar St., New Haven 11, Conn.

• Permanent position desired with opportunity for significant research with or without teaching. Ph.D. and national research council fellow with experience in iron uptake and phosphate metabolism of blood, biochemistry and physics of various radio isotopes, radiation effects, plant physiology, instrumentation and publications. Is adaptable to a variety of research and production problems. B.S. in economics with experience in statistics. Married and 37 years old. Address: A-82.

• PHYSIOLOGIST: Pharmacology and biochemistry minors. Male. Considerable experience in good teaching. Publications. Ph.D., member of several scientific societies; interested in full-time academic position. Time arranged when available. Address: A-83.

• PHYSIOLOGIST: Ph.D., specialized in endocrinology (undergraduate training in veterinary medicine). Prefer research position in endocrinology or physiology. Available Jan. 1, 1954. Address: A-84.

• BIOCHEMIST - HISTOCHEMIST: Ph.D. Man. Age 36, married, children. Would like permanent teaching-research position in histology, histochemistry, biochemistry. Publications in physiology, histochemistry, biochemistry. Available July 1, 1954. Address: A-85.

• ANATOMIST: Man, Ph.D. Several years teaching experience in gross anatomy, histology and embryology in medical and dental schools; also teaching experience in many biological sciences in liberal arts college. Publications. Excellent references. Desires academic position at medical, dental or pharmacy school or liberal arts college where good teaching is considered important. Administrative duties welcome but not necessary. Now employed on medical school staff. Available on short notice. Address: A-86

• ZOOLOGIST - PARASITOLOGIST: Ph.D., Male, age 31, married. Desires opportunity to earn M.D. degree by attending medical school part-time and teaching part-time. Prepared to assist in teaching parasitology, gross anatomy or histology plus several of the basic zoological courses. Five years teaching and research experience. Publications. Member of Sigma Xi and several other scientific societies. Has conducted personal research and directed graduate research in parasitology. Suitable liberal arts college will be considered. Address: A-87

• Gynecologist-Obstetrician: Age 31, White, Protestant. Completing University Hospital residency and M.M.Sc. in June. Teaching background. Immediate supervision of residency program. Desires full-time teaching association with opportunity for investigative physiology. Address: A-88.

• Physiologist: Ph.D., male, 33 years old. Well-trained in human physiology, biochemistry and anatomy. Seeks a position in a medical or dental school, where emphasis lies with the instruction of students, and research can be conducted at the discretion of the appointee. Address: A-89.

• Biochemist: Ph.D. 1950. Age 30, family. Three years graduate teaching assistant. Doctoral thesis on degradation of hemoglobin. Past three years research on relationship of sulfur compounds to metabolism of aromatic hydrocarbons. Experienced in use of radioactive isotopes. Four publications. Medical school teaching experience. Desires teaching

position in biological chemistry. Address: A-90.

• PHARMACOLOGIST: Ph.D. age 28, married. Presently teaching at medical school. Research experience includes hormones, anticonvulsants and the use of radioactive isotopes. Seeks position in teaching or research with opportunity for obtaining M.D. degree. Address: A-91.

• BIOCHEMIST: Ph.D., desires change. Present position: 25 years medical school professor. Many publications on metabolism and nutrition. Honors, awards, editorial boards. Will consider research, teaching, administration, clinical chemistry, editorial work. Address: A-92.

• ANATOMIST: Age 47; woman, M.S. and several years additional training. 12 years teaching experience in all branches of anatomy, especially gross and neuroanatomy. Publications, references; available immediately. Address: A-93.

• INTERNIST-PHYSIOLOGIST: M.D., Ph.D. Age 31. Board eligible with interest in gastroenterology. 2 years residency in internal medicine, 1 year residency in G. I. and 2 years research and teaching physiology. Desires position with research facilities in basic science and clinical fields. Address: A-94.

• BIOCHEMIST: Ph.D. 1943. Extensive research experience since 1941 in enzymes, physical chemistry of proteins, plasma, microbiology and chromatography. 22 publications. 2 years teaching of graduate students, 4 years of medical students as assistant professor. Desires permanent position with opportunity for research and teaching or administration in northern section of country. Available after August 1954. Address: A-95.

• BACTERIOLOGIST: Ph.D. Man. Age 30, married, veteran. Teaching experience in medical school. Publications and references. Sigma Xi. Would like teaching-research position in medical bacteriology, virology, or immunology. Prefer location in west or southwest section of country but would consider other location. Available July, 1954. Address: A-96.

• PHARMACOLOGIST-PHYSIOLOGIST: Male, Ph.D. Broad teaching experience at both undergraduate and graduate levels; has organized course in medical pharmacology. Active in research, including clinical applications. Publications. Member of professional societies. Available on short notice. Address: A-97.

• PHYSIOLOGIST: M.D., M.A. chemistry, diplomate. 27 months of residencies. 5 years of practice. 3 years of research and teaching. Research papers in pulmonary physiology and biophysics. Desires teaching position with opportunity for research. Address: A-98.

• SURGEON: M.D., L.R.C.S. Foreign-born; naturalized. Experience includes 2 years postgraduate work in surgery and 6 years approved residency. Desires teaching-research position in medical school. Available July 1954. Address: A-99.

• PHARMACOLOGIST: Ph.D., associate professor in large medical school, fully qualified for departmental administration, desires change to responsible position. 14 years medical teaching, including organization and presentation of all phases of pharmacology courses. Active in research and in direction of graduate activities. Member of pertinent societies. Available Sept. 1954. Address: A-100.

• BACTERIOLOGIST: Ph.D., desires teaching and/or research position. Experience in teaching, research and consulting. Successful preparation of nurses, pharmacists and premedical students. At present, assistant professor. Available on short notice. Address: A-101.

• INSTRUCTOR and/or RESEARCH ASSISTANT: M.D. Japanese; American born, Age, 40. Reads, writes and speaks English fluently. Experience: 1 year residency in otorhinolaryngology; and 3 years residency in surgery at the Kyoto Prefectural Hosp. 3 years as medical lab technician at the U. S. Army Hosp. in Kyoto, Japan. 4 years as chief of E.E.N.T. department, Kushida Hosp., Osaka, Japan. Engaged in private practice since 1952. Address: A-102.

• PHYSIOLOGIST: M.D., associate professor, man, age 35, married. Swiss. Research for 7 years in respiration and circulation in Switzerland, U. S., England and Germany. 7 years teaching experience. Background in math, physics and chemistry. Prefers position in research or teaching for about 3 years. Publications and references. Available in autumn 1954. Address: A-103.

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2. Welch, H.: Ann. New York Acad. Sc. 53:233 (Sept.) 1950.
3. Werner, C. A., et al.: Proc. Soc. Exper. Biol. & Med. 74:261 (June) 1950.
4. Wolman, B., et al.: Brit. M. J. 1:419 (Feb. 24) 1951.
5. Butterfield, T. G., et al.: J. Philadelphia Gen. Hosp. 2:6 (Jan.) 1951.
6. King, E. Q., et al.: J. A. M. A. 143:1 (May 6) 1950.

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